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The orchid-grower's manual

Benjamin Samuel Williams



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Oakes Arms
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July 7. 1895

THE
ORCHID-GROWER'S MANUAL,

CONTAINING

DESCRIPTIONS OF THE BEST SPECIES AND VARIETIES
OF ORCHIDACEOUS PLANTS IN CULTIVATION;

TOGETHER WITH

NOTICES OF THEIR TIMES OF FLOWERING, AND MOST APPROVED MODES OF TREATMENT;
ALSO, PLAIN AND PRACTICAL INSTRUCTIONS RELATING TO THE GENERAL
CULTURE OF ORCHIDS; AND REMARKS ON THE HEAT, MOISTURE,
SOIL, SEASONS OF GROWTH AND OF BEST BEST
SUITED TO THE SEVERAL SPECIES
AND VARIETIES.

BY

BENJAMIN SAMUEL WILLIAMS, F.L.S., F.R.H.S.,

*Author of "The Orchid Album," "Select Ferns and Lycopods," "Choice Stove and
Greenhouse Flowering Plants," "Choice Stove and Greenhouse
Ornamental-leaved Plants," &c. &c.*

SEVENTH EDITION, ENLARGED AND REVISED TO THE PRESENT TIME.

BY

HENRY WILLIAMS, F.L.S., F.R.H.S.,

Author of "The Orchid Album."

WITH NUMEROUS ILLUSTRATIONS.

LONDON:

PUBLISHED AT VICTORIA AND PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

1894.

ORCHID

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PREFACE TO THE SEVENTH EDITION.

SINCE the issue of the last edition of this work in 1885 our father, the late Mr. B. S. WILLIAMS, has passed away deeply regretted by his many personal friends, and indeed by the whole Horticultural World, who have received such benefit from his various works and writings, and more especially the ORCHID-GROWERS' MANUAL, which has gained notoriety throughout the civilised world, and is even now the text-book of the majority of Orchid Growers, notwithstanding the numerous books on Orchid Culture in existence at the present day. The Sixth Edition having for some time been completely exhausted, it has devolved upon us, the only son and successor to the late Mr. B. S. WILLIAMS, in response to many requests, to prepare and issue a new Edition. The enormous increase of this family of late years in both species and varieties, as well as hybrids, has so enlarged this work that it was necessary to consider the advisability of either increasing the size of the book or issuing it in two volumes; believing the latter course to be unacceptable to our readers, we have decided to adopt the former course. These novelties, so far as they have been considered worthy, have been incorporated in these pages.

We have introduced many new illustrations representing as far as possible each genus, and most of the more popular species and varieties; many of these are original, others have been very kindly lent by the Editors of *The Gardeners' Chronicle*, *The Journal of Horticulture*, *The Gardening World*, *The Garden*, *The Gardeners' Magazine*, A. H. Smee, Esq., Messrs. James Veitch & Sons, Mr. W. Bull, and other kind friends, to whom we have to record our most sincere thanks.

To our old friend and coadjutor Mr. W. H. Gower we are indebted for assistance with the references and new descriptions of some of the plants here enumerated, also to Mr. R. A. Rolfe, of the Royal Herbarium, Kew, for information and assistance with the bigeneric hybrids, and to our colleague Mr. G. K. Gude for assistance with regard to the references, figures, and reading of the proofs.

It is highly gratifying to us to receive constant communications from various parts of the world from Orchid Growers who express their delight in having read this work, and who state that it was the means of their first commencing to grow this fascinating group of plants; it is in deference to the wishes of many of our old subscribers that we have launched upon this new venture, and we hope that the support accorded to the former editions of this work by the Orchid-loving community may be renewed to this edition; no expense or pains have been spared to make it as complete as possible, and we have again been reluctantly compelled to increase the price. As before stated in the previous edition of this work we do not aim to instruct Botanists, but to assist Amateurs, by placing before them plain and practical information on a sound scientific basis, so that for the time and pains bestowed on the cultivation of this charming class of plants, they may be rewarded by the production of fine specimens, and as a consequence, abundant and beautiful flowers.

HENRY WILLIAMS.

May, 1894.

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ORCHID EXHIBITION HOUSE IN THE
100 ft. by 22 ft. (



VICTORIA AND PARADISE NURSERIES.

(From a Photograph.)

THE ORCHID-GROWER'S MANUAL.

INTRODUCTION.

THE cultivation of Orchidaceous plants is no longer exclusively the privilege of the few, now that their nature and requirements are better understood than was the case in former years. This has arisen chiefly from three causes: firstly, from the useful information given us by those who have studied the plants in their native habitats; secondly, from the close study and application by means of which cultivators at home have brought the varied observations of travellers to bear in a practical manner on the culture of the plants when introduced into this country; and thirdly, from the fact having been discovered that many, at least, of the most ornamental species require less heat and less expensive appliances than was once thought necessary, thus bringing them within the reach of a larger constituency.

It cannot be too strongly impressed upon the minds of all who send plants of this order home from foreign lands that every scrap of information respecting the climate—temperature, rainfall, altitude—soil, &c., of the locality in which each species is found, is of the greatest importance not only to the scientific observer, but also to the cultivator; not because we can under cultivation strictly imitate the natural surroundings of each particular species or variety, nor, indeed, do we think that this would in all cases be desirable, but the information would enable us to adopt the treatment most congenial to the requirements

of each, so far as the means at our command would permit. The want of some such information has been a source of extreme vexation to many lovers of these plants in years gone by. For instance, had we received even the most meagre account of the natural physical and climatal surroundings of the many fine things found and collected by M. Warscewicz, and other travellers of the same period, the collections of the present day would be able to boast, as now they cannot, of many fine species which have never since reached this country in a living state. The collections alluded to were sent to Europe in a very careless manner, and without the slightest indications of the conditions under which they had been growing; and, Orchidology being then in its infancy, they were nearly all killed by being subjected to excessive heat, the keeping up of a strong heat being in those days considered the correct course to pursue with all Orchidaceous plants. Thus hundreds of beautiful species, which had been collected at great cost and risk, and were purchased by eager amateurs at home, oftentimes at high prices, rapidly died out, simply from the prevailing ignorance of the climatal conditions of the localities in which they had been collected.

Thus it will be seen, that in order to assist in preventing a repetition of such disasters and disappointments, the experience of those who have had the good fortune to see Orchids growing in a state of nature is of the greatest importance, giving as it does a solid basis to any experiments which may be made. Strange as it may appear to some, and ridiculous as it has been pronounced by others, we do not consider it advisable to imitate strictly the natural conditions in which plants are sometimes found, because we have seen so many proofs that, as individual specimens, the cultivated plants are frequently to be seen in greater perfection than those grown in their native habitats. It is, indeed, only reasonable to infer that such would be the case with the majority of small-growing tropical plants, when we consider the struggle for existence which is constantly going on throughout the vegetable kingdom, and remember that they are subject to all the vicissitudes of the seasons; whereas under cultivation extreme care and attention are bestowed upon each individual plant, and no pains are spared to develop its beauties, and shield it from every harm. We admit that we should by all means take nature as our guide for the production of good plants, but it should be nature in her best garb only; and then, looking as we

do upon cultivation as a help to nature, the result can only be an improvement, if success in the object aimed at has been attained.

Let us endeavour to make our meaning clear by a familiar example. We have frequently seen some of our indigenous ferns, such as *Scolopendriums*, *Lastreas*, &c., growing upon dry banks, stony grounds, and old ruins, where they have presented the appearance of short, stunted, ill-favoured plants, but still they were in a state of nature. Now, no one would recommend the cultivator to imitate that phase of nature. No—rather would the counsellor say, “Go to that shady dell, with the limpid stream flowing through it; there you will see the rich green, fully developed, and graceful fronds of these gems in all their beauty.” This, then, we say is the phase of nature which cultivators should take as their guide, and endeavour to improve upon. We submit that these considerations are strictly applicable to the plants we have taken under our special cognizance in this volume, and will exemplify this by an extract from a letter of Colonel Benson. He says—“*Dendrobium formosum* does not appear to seek shady places for growth; in fact, as far as my knowledge goes, few Orchids do, beyond what is given by the trees when in leaf. During the months of February, March, and April, they are exposed to an atmosphere of 110° in the shade. That the fresh-grown pseudobulbs are by this means reduced in size or shrivelled there can be no question; and in some of the mountain Orchids this reduction takes place to such an extent as to render it doubtful whether they are the same plants when first seen at the end of rains.” Now take the case of these plants under culture; the growing or rainy season past, their supply of water would be gradually diminished, and they would be exposed to the full effects of the sun, with plenty of air, but only so long as they could withstand this treatment without shrivelling; for, should this condition ensue, or should exhaustion from any other cause arise, the cultivator would step in, and by judicious treatment preserve the strength and consequently the health of the plant, whilst the plants in their native localities must bear the full power of the scorching sun, let even death be the result. Here, then, we say is a proof that art does in some instances assist nature.

Nearly all epiphytal Orchids are subject to a period of rest, growth taking place during the rainy season, while their resting period occurs during the dry season. Under cultivation, however, we have to alter

the circumstances considerably, and make our dry season also the coolest, which is the reverse of what the plants experience naturally ; this, indeed, seems to be the most judicious plan we can adopt, for it would simply be madness to endeavour to force our Orchids to make their growth during the winter months, and rest them during the summer. The best season of rest for the majority of Orchids is from about the beginning of November until the end of February. This long period of drought predisposes the plants to blossom, and also prevents them from making weak and sickly growths, which would undoubtedly be the case in the short dark sunless days of our winter.

In this place, of course, rules respecting the growth and rest of Orchids can only be stated in general terms, the treatment in detail being given with the description of each particular genus. Then, again, there are certain species which are never entirely inactive throughout the whole year, amongst which may be named some of the *Odontoglossums*, *Masdevallias*, and many others whose home is in the Andes of South America and other high mountainous districts.

It is often thought that as Orchidaceous plants are so extremely tenacious of life, the fact of their dying can only be the result of carelessness in their management ; but it should be borne in mind that we have under the same roof plants from many different countries, whose natural habitats must vary immensely in most respects. Now, if a little thought is only bestowed upon this fact, it should rather be a matter of surprise how so many plants are successfully managed, than how so many are lost.

Orchid cultivators, and indeed all lovers of Orchids, lost a good and valuable friend and instructor in the late Dr. Lindley ; and in this particular branch of botany no one amongst us has been found competent to fill the void. The late Professor Reichenbach, who was the friend of Dr. Lindley, was undoubtedly the first authority in regard to nomenclature of Orchids, but the fact of his labours having been carried on in Germany—no fault of his, but our misfortune—was a great disadvantage to English cultivators.

We predicted many years ago that Orchids would be grown for the million. The original portions of this volume were, in fact, brought out in the *Gardeners' Chronicle*, in a series of papers entitled "Orchids for the Million." It was perhaps presumption on our part to predict what

in those days seemed to some people to be utterly impossible. We were often told so after these papers had been published in the *Gardeners' Chronicle*, but we were well rewarded by receiving the approbation of Dr. Lindley, who was the greatest authority on Orchids at that time. When we told Dr. Lindley of our intention to bring out the ORCHID-GROWER'S MANUAL, he advised us not to do so, feeling sure, he said, it would never pay; but our intention was fixed, for it gave us unbounded pleasure to write of our favourites, of which we were then as fond as we are now. Indeed, it is to us a source of great satisfaction to do all we can to bring Orchids before the public, and we are glad to find that our efforts are appreciated, and that there is an increasing taste for these lovely and varied plants. All plants require attention, some of course more than others, but these can be as easily cultivated as any; and as some Orchids can now be bought for a few shillings each, they come within the reach of everyone who has a small house, and in such a structure a few of them can be grown with very little trouble and expense.

If Orchid collectors will take our advice, founded on many years' experience, and import the plants at a proper time of year, we should have a good supply, and to spare, and be able to leave some for stock in their native country, instead of sacrificing the whole produce of a district where doubtless plants, and among them new species and varieties would turn up, as there are so many natural hybrids, and sometimes but few of the same type in one locality.

We have now in cultivation several species, of which there has only been one importation, such as *Aërides Schröderii*, *Cypripedium superbiens*, *Cypripedium Fairrieunum*, and others we could name, and although our collectors have been in search of these scarce plants, they have not been successful in again finding them. Look at *Laelia anceps Dawsonii*. Collectors have been to the very spot where this was first found, but we do not think there has been one plant brought home since. Mr. Low's traveller was the first who brought it, and since then there have been many sold for it, but they have proved not to be the true variety; and although a large number of white forms of *Laelia anceps* have been found during the last few years, some resembling *Laelia anceps Dawsonii*, yet none of them are so good as the true *Dawsonii*, neither have they the same breadth of petal and the free flowering quality of that variety. We mention

these facts for the information of our readers, as well as of importers, in order to show how important it is to try and get home alive all the plants collected, so that the public may have a chance of saving these treasures. This would be better for collectors and importers, as well as buyers; for the present destructive system, or want of system, leads to a loss of capital, and is, besides, an annoyance both to sellers and purchasers. The losses of purchased plants in this wholesale way—plants that will not grow under the best treatment—often stop amateurs from going on with their cultivation. We do not lay all the blame of non-success on the collectors, for there are many other causes which lead to loss even when they are brought home at the right season; for instance (1) they may be injured by damp in the cases; then (2) sea water will affect them injuriously if it gets on them; and (3) sometimes our amateurs and growers do not treat them right when they receive them. Full directions on this important matter will be found in our chapter on the Treatment of Newly Imported Plants.

In bringing these introductory remarks to a close, we desire to record our deep sense of the obligations we owe to the many travellers and collectors who have added so largely to our knowledge of Orchids, and who have laboured so arduously and incessantly to enable us to enjoy the beauties of the choicest productions of the vegetable world without meeting the dangers and difficulties with which they have had to contend. We allude especially to such men as Warscewicz, the brothers Lobb, Hartweg, J. G. Veitch, Colonel Benson, O'Reilly, Rev. C. Parish, Pearce, Bowmann, Weir, Hutton, Kramer, Porte, Wallis, Linden, Skinner, Hugh Low, Schlim, Blunt, Roezl, Klaboch, Endres, Chesterton, and many others who might be named did space permit. Many of them, alas! have fallen victims to the fatigues of the undertaking and the pestilential climates to which they have been exposed, thus suffering martyrdom for the cause of horticulture. These were men who had in view the advancement of science, and the enriching of our collections with new forms of plant life; and their example might be followed with advantage by many of the latter day collectors, who, instead of sending home a few plants in good order, allowing the skill of the cultivator to grow and increase them at home, seem determined to exterminate certain kinds of Orchids from their natural localities, without anyone deriving benefit thereby. When such vast quantities are gathered

they arrive in this country in an almost putrid state arising from overcrowding and heating; whilst, had a few dozens only been sent, and that with proper care and packing, they would in all probability have arrived in a living state. We are glad to find, however, that latterly collectors are gaining more experience in this matter, both as regards packing and means of transit, and that plants arrive now in far better condition than was formerly the case. And again, more rapid transit to India, the Philippines and other East Indian Islands, to the Mauritius, and Madagascar, &c., &c., by the opening of the Suez Canal, and the greater speed of our ocean steamers, renders many plants easily come-atable even by those of limited means at their disposal, whilst, on the other hand, there still remain many great difficulties in the transit of plants which lead to their decay and death, more especially is this the case where the plants have to be shipped in some local boat of call which may be weeks before it reaches the port of departure for Europe; and this delay occurs in the worst of climates for preserving the life of the plants.

HABITATS OF TROPICAL ORCHIDS.

ORCHIDS are divided into two sections, the Terrestrial and the Epiphytal. Those are termed Terrestrial that grow directly in the earth. Such are the species of *Orchis*, *Phajus*, *Culanthé*, *Bletia*, *Cypripedium*, *Neottia*, *Goodyera*, *Epipactis*, &c., which all draw their support directly from the ground. The Epiphytal Orchids, such as *Aërides*, *Vanda*, *Angraecum*, *Saccolabium*, *Cattleya*, *Oncidium*, &c., grow on trees and rocks, from which, however, they derive little or no nourishment, on which account they are often called Air plants. These are by far the most numerous and interesting. Some are found adhering to the stems and branches of living trees; some of them delight in elevated situations in lofty forests, while others grow upon low trees. Some occur on rocks and mountains, some on trees overhanging rivers, and some near dripping rocks—the latter, of course, requiring a particularly damp atmosphere to grow in. Those which are found in dense woods, where scarcely any sun can penetrate, require a shady moist atmosphere, whilst those found in more elevated situations do not need so much shade as the last.

A knowledge of the different habitats of the various species is essential to the careful grower, in order that he may, as far as his means permit, place them in circumstances similar to those in which they make their natural growth; and it is, no doubt, to inattention, or lack of information on this point, that the want of success in the culture of some Orchidaceous plants, by even the most successful of our cultivators, is to be in a great measure attributed.

Epiphytal Orchids are found in tropical countries growing on the low grounds or plains, and they are also met with as we ascend the mountains up to an elevation of 14,000 feet above the level of the sea. At this altitude, in New Grenada, *Oncidium nubigenum* flourishes. This is, we believe, the greatest altitude at which these plants are recorded to have been found. *Odontoglossum Alexandrae* occurs at from 7,000 to 8,000 feet elevation, as does *O. luteo-purpureum* and its varieties, together with *Masdevallias*, *Restrepias*, and many others from Peru and New Grenada. At such elevations, as a matter of course, the plants are naturally subjected to a low temperature, an abundant supply of water, and a very moist atmosphere throughout the year, and consequently they cannot endure a resting season or a period of drought under cultivation. But if we turn to the Eastern Continent, we find such plants as *Dendrobium chrysotozum*, *D. Farmeri*, *D. suavisissimum*, *Aërides Lohbii*, *Saccolabium ampullaceum*, *S. giganteum*, *Cypripedium concolor*, *Cymbidium tigrinum*, &c., all growing at elevations varying from 2,000 to 7,000 feet, enjoying a copious supply of water during their period of growth, and subjected to a very severe resting season. Now, as these plants grow upon the stems and branches of the forest trees, or upon rocks, they must necessarily be exposed to all the breezes that blow. How reprehensible, then, is the practice of many growers of Orchids in trying to exclude fresh air from their Orchid houses. For the well-being of Orchids, it should be remembered that a free circulation of air is absolutely necessary, as well as an abundance of light; but cold draughts, and also the burning effects of the sun's rays, must be avoided, for it is not essential to their well-being to be hung up close to the glass, fully exposed to the blazing sun; indeed, the life of the plants would, under such circumstances, soon be sucked out of them if shading were not provided.

There are so-called observers of nature who blame the cultivator for many of his acts, and he has perhaps suffered more wrong at the hands

of this class of persons upon the matter of shading, than upon any other. We are frequently told that in a state of nature such and such plants grow in most exposed situations—situations open to the full effects of a tropical sun, and that nothing can be more erroneous than the manner in which we use “blinds” for the purpose of keeping away the bright light of that luminary. There are, no doubt, exceptions to this rule; for instance, many of the Eastern *Dendrobies*, such as *D. bigibbum*, *D. superbiens*, *D. Phalaenopsis*, *D. Williamsianum*, *D. Goldiei*, the Indian *D. formosum*, &c., we have grown with the best results, without the slightest shade. All we can say in answer to the objectors is that they totally lose sight of the fact that our plants are growing under glass, which has the power of burning up the leaves and thus disfiguring our plants for years, if not for life; and that sunlight under glass is very different to that in the open, where the wind counteracts its burning properties to a certain extent. A little practice would soon teach such persons how erroneous their ideas are on this point, and they would soon sink their so-called natural treatment, had they to be responsible for the effects produced thereby. In leaving this part of our subject, we must add that plant-growers are now keenly alive to the advantage of strong sunlight for their plants, but that they are too practical to allow more than is advantageous to them under the artificial circumstances in which they are placed.

THE SEASON FOR COLLECTING ORCHIDS.

WE are extremely sorry to see the large importations which are sent home in the autumn and winter months, and sold by auction during the cold season, without any regard to the requirements of the plants, or to the interests of the buyers, who are told that the plants have had no cold to hurt them. Such plants, nevertheless, as soon as they reach home, and are housed, lose their leaves, and eventually die. The loss of the money and also of the new and valuable plant, for which a high price has been paid—with a view to secure the best form of some new and rare kind—must be very annoying to the purchaser. If collectors will insist upon sending and importers on receiving these plants in winter, they should keep them in their own Orchid houses

until they get established, or show some signs of being of use to those who feel disposed to pay handsomely for them. The smaller buyers also have their losses, being assured by those who import the plants that they have had them in their possession, and exposed in their Orchid houses, for so long a time, while the fact is that many are kept from the light. Moreover, when they are sold, it is not merely the cold weather that meets them as they come from their native country, that destroys them, but exposing them at sales and keeping them in cold places, after they have arrived safely. We have seen nearly every plant of an importation lost through this treatment. Take, for instance, the East Indian Orchids, when sold in winter, and to all appearance in good health, having their green foliage upon them, but when they are put into light and warm houses the leaves turn black or brown, and fall off; then the heart of the plant goes, and it becomes quite useless; whereas, if the plant had been sent home in spring or summer, there would have been a chance of saving it if the leaves had been on it and it had not been exposed to the cold. Such importations are not only a loss to the buyers, but also to the collector, as there are many lots that cannot be sold, and have to be thrown away.

There is another great evil attending importations, but this occurs in their native country; the plants are heedlessly torn from their natural habitats, which are sometimes ruthlessly cleared of the beautiful flowers that cannot be replaced in the locality. We are sorry to hear of some of our collectors having so little respect for these treasures of nature's production that they gather all they can, having no regard for the future, and not even leaving a few plants in the locality to increase and multiply by shedding their seed to germinate naturally over the mountains, rocks, and trees. If this kind of work continues, there will be but few Orchids left, excepting where the collectors cannot get at them. It is to be feared that some of our collectors do not go for the love of the plants, but to make all they can for the time being, heedless as to whether they would be able to get more the following season.

Our botanists who from time to time have travelled have gone out for the love of the plants, and in order to gain knowledge of them. These men have freely imparted the information they have obtained to those who have remained at home, by giving a record of their travels,

and by collecting dried specimens of new and old species, as well as living plants, for the extension of our collections, and the increase of our knowledge of the peculiar characteristics of the plants. We are well aware that the demand for them at the present day is very great, there being now a much larger number of collectors. This we can prove by referring to the hundreds of cultivators who have started since we commenced the culture of these wonderful plants—no doubt, because there are no flowers that are so suitable for decorative purposes, and none that give the same amount of pleasure, and last so long when on the plant, or when cut and put in water to be used as an adornment for the drawing-room or the dinner-table. Again, when grown into specimens for our exhibitions, they are always the most attractive objects, and where banks of these plants are staged crowds of admirers are constantly to be found.

HINTS ON COLLECTING ORCHIDS.

THERE are many different ways of importing Orchids to this country. I. We have seen some that have arrived in good condition, while others have been completely destroyed by not being properly prepared before starting. The first and most important thing is to prepare them for their journey. The next most important matter, perhaps the most important of all, is to start them on their journey at the proper time. Our opinion is, that the plants should be sent away from their native country during the dry season, which is when they are at rest. While inactive their leaves and pseudobulbs are thoroughly ripened and firm, and contain but little sap; whereas, when they are growing the foliage is necessarily tender, and in greater danger of being bruised, a circumstance which accelerates decay during the voyage. Another reason in favour of dormant importation is, that, if sent in a growing state, or just as they are starting into growth, the young shoots push out while on the journey, and for want of light and air become weak and dwindling, very often dying outright as soon as exposed. We have seen many a fine mass of *Cattleya* imported with all the leading growths completely rotten, which, of course, greatly lessens the value of the plants as compared with those that arrive perfect, and which are just ready to start into growth as soon as they are put into a warm house. In the case of

those species which grow at considerable altitudes, and have no decided dry season, advantage should be taken of the time when their growth is less active, so that there may be less inducement for them to start into growth before reaching their destination. Plants which on arrival have pushing pseudobulbs are also apt to lose their leading eyes, an accident fatal to some Orchids, for many do not break well, if at all, from old bulbs.

The species of *Aërides*, *Saccolabium*, *Vanda*, *Angraecum*, *Phalaenopsis*, and similar plants that have no fleshy bulbs to support, are best imported after they have become established on flat pieces of wood, so that they can be nailed to the sides of their travelling cases. We once received a consignment of Orchids from Manilla, including amongst other fine plants some beautiful examples of *Phalaenopsis Schilleriana*, *P. rosea*, *P. amabilis*, *P. intermedia*, *Aërides quinquevulnerum*, and *Saccolabium violaceum*, all established and sent off in the way just described; they had evidently been growing some time before they were started for this country, for on arrival their roots adhered firmly to the wood, and many of their leaves were as green as though they had been in an Orchid house, instead of having made such a long sea-voyage in a glass-topped case.

One point of importance is to take care to secure the plants well to the sides of the cases; because, if allowed to roll or swing about, they get bruised and soon rot, which is very vexing after all the trouble and expense bestowed on importing them. In the case of the *Phalaenopsis Schilleriana* just referred to, some of the pieces of wood had become loose, and these from rolling about during the journey had caused injuries. In such cases, if any leaves are bruised during the journey, the best way is to cut them off at once before decay begins; for if allowed to go on, there will be danger of the whole plant being destroyed. With the cases just alluded to, we received also a close box filled with *Phalaenopsids* packed in the dry bark of trees, which is a very bad material for such tender-leaved plants, for when unpacked there was not a green leaf to be seen; the shaking of the rough packing material during the long journey had destroyed all the foliage. If these had been packed firmly in very dry soft moss, they would most likely have travelled safely.

We have received plants in good condition from India in close boxes, packed in dry soft wood shavings; while on the other hand many have been entirely spoiled in that way. The cause of failure we attribute to

their not being packed in a proper state; the plants themselves, as well as the material employed, should be well dried before packing, and care should be taken to avoid bruises, which often prove fatal. *Cattleyas* and plants with similar pseudobulbs we have received in close boxes from Brazil, packed in dry shavings, and have found them, when opened, in good condition; but care had evidently been taken to pack them firmly so that they did not shake about in the boxes on their journey.

Odontoglossums travel best when tied upon sticks of wood, which should be securely fastened in the cases.

The best time of year for receiving Orchids in this country is, if possible, the spring, in order that they may have the summer before them in which to get established.

With the *Anoectochili* the best way is to tie some moss round their roots and stems to keep them firm, leaving the foliage free just above the moss; they should occupy a small case by themselves. These little things are very tender, and therefore require a great deal of care to import them alive. On arrival, pot them in some dry soil (see *ANOECTOCHILUS*), and put them in a close place with little heat at first, until they begin to grow; afterwards pot them separately in small pots, and place them under hand-glasses or in a frame, giving them the treatment usually recommended for this class of plants.

Cases in which Orchids are sent home ought to be made strong, and if glazed, roofed with good stout glass not easily broken; for we have often found plants spoiled by the glass being fractured. Through an accident of this kind, salt water and cold air may get in, both of which are very injurious. All cases should be air-tight and water-tight, except a round hole at each end near the top, covered with wire gauze inside and out, to allow the damp air to escape. To prevent the glass being broken, the best thing to place over it is some strong iron wire, or perforated zinc, or stout and broad wooden bars. The sash bars ought also to be made very strong, and the case must not be placed during the journey too near heated surfaces or fires in the ship. We have seen many boxes of plants spoiled by being set in such positions, the leaves being completely dried up. They ought to be placed in a moderately warm situation, but by no means near any fires or boilers. Many plants also arrive in this country in a dead or dying state, from the effects of full exposure to the rays of the sun; this, however, may be obviated by simply painting the glass

white inside, but it must be allowed to become thoroughly dry before being fastened down.

During the last few years an immense quantity of Orchids have been sent to this country, a large proportion of which have proved to be dead upon arrival. This may perhaps be assigned to several causes, but the rapacious appetite of the collector is the principal one, the boxes being overcrowded by his sending home thousands instead of being satisfied with a few dozens, and as a consequence all have arrived dead. Another probable cause of this loss is, that they may have been gathered at the wrong season. All this is sad to contemplate, involving as it may do the extermination of the plants in their native homes, besides loss of time to the collector, which, combined with the loss of money, causing vexation and disappointment to the trade cultivator at home, have a most depressing influence upon Orchid growing. These deplorable results might be avoided if collectors would be satisfied with a less number of plants, and would attend to the few simple rules given in this chapter, adapting them to suit the circumstances in which they find themselves placed.

RISKS OF COLLECTING ORCHIDS.

THERE is no doubt that there are many conditions, sometimes peculiar ones, under which Orchids can be successfully grown; and much has yet to be learned regarding their requirements, the methods of cultivation to which they may be subjected, and the amount of endurance they possess. The treatment they receive after their arrival from their native habitats is also to them a matter of importance. Before they come into our hands, they are found growing in a perfectly natural way, without human aid, having, of course, their native climate to enjoy, receiving heavy moisture by night, which they absorb and store up for their immediate sustenance, and being also favoured with a rainy season as well as a dry one. These different conditions of course exactly meet their wants in their growing and resting seasons respectively. It must be a delightful sight to witness them growing and flowering in this natural way, throwing off their sweet perfume to the breeze, while the roots cling to the branches and stems of the trees where they abound, and in which situations they multiply by means of the seeds scattered

from the withered seed-pods. This seed in process of time germinates and forms young plants which finally get established on the branches, and there the fallen leaves, settling among their roots, by feeding impart to them new vigour, thus preparing them to enter upon and endure the alternating season of drought. Their foliage helps to direct the natural moisture and to retain it about the roots, which are thus enabled to grow more freely, and to fasten themselves securely to the branches and stems of the trees on which they become located.

In their native habitats Orchids have many drawbacks to their growth; they have insects, as we have in our houses, but far more numerous; and they have the extremes of weather to contend with. The plants are generally found on the high trees at the margins of the forests, where they are subject to rough winds and furious storms; in fact, large trees are often blown down loaded with the beautiful blossoms of the plants growing on them, and are frequently destroyed in this way. The stock, however, is generally maintained by the seedlings, which are found to be much more abundant in some localities than in others. Some species on the contrary affect low trees and shrubs, oftentimes sending their roots down into the damp soil beneath.

It often happens that, when being removed from their native resorts, the plants are injured by the collectors and by the natives whom they employ to gather them from the high trees and other places difficult of access. They are frequently packed in sacks and transported on the backs of mules, in order to reach the sea-port for shipment; and the native men who help to pack them are very indifferent as to how the bulbs and foliage, which require so much care, are handled. The voyage these plants have to undergo is often very detrimental to them. Sometimes they are placed on a part of the vessel where they get too much dry heat, or where they may get the salt water on them, and these injuries often cause them to rot, or the very life to be shrivelled out of them. A good proportion of the importations, however, seem to endure, notwithstanding the treatment they receive after their arrival here, though passing through hands that have no love whatever for them beyond the hope of selling them to the best advantage, and that care little or nothing for the bruises they sustain, or for the bulbs that get broken. After all this they thrive well in many cases. This shows us that when the plants are in a dormant state, rough treatment is not so

injurious, but in this case the eyes must be plump, and then, when placed in a warm house where there is some moisture, they will soon make plants with fine bulbs, and they may also flower. If the plants are allowed to make growth on their journey, they will generally be found to damp or rot off; and although some Orchids which have strong bulbs produce plump eyes from the back bulbs, and will break away freely, yet in the case of the delicate kinds their offshoots will break weakly and pine away. Such as these require close watching, which those who delight in their pets will not fail to bestow on them, and there is then a chance of saving them.

Our ways and means of imitating nature are very limited, but we do succeed in very many cases, although so large a number—hundreds of them—are lost through the rough treatment of which we have spoken, and for which there is really no help; for in the plants' native countries our collectors have to undergo much hardship and privation in order to secure for us these floral gems, and many brave lives have been lost in the endeavour to do so. Some of our most clever botanists and collectors have sacrificed their lives in endeavouring to procure for us these treasures; hence to those who have survived and still persevere to send us new consignments, we owe many thanks. No one knows the trouble and expense of collecting Orchids but those who have gone or sent out men in search of these precious plants; they deserve all they get and more for the risk they run, since their attempts are frequently fruitless, for it often happens that after collecting for months the plants are all lost, not through their neglect, but from unavoidable mishaps and unfavourable conditions. For example, the cool Orchids have to come through hot countries before they are shipped, and then long delays often occur to lengthen the time taken by the voyage. Again, when coming from a hot climate they often reach this country at the cold season. In fact, none but those who are at the expense of importing Orchids from these distant lands have any idea of the risks incurred.

Another risk to which importers are subject relates to the sale of the plants; many have to be sold privately, others at public auctions. If they are new and fine species they generally sell well, and should there be buyers for that particular class, they frequently realise a fair sum, whilst many other good kinds may be sold at prices which are not sufficient to pay the expenses of getting them home. New species may

turn up in these importations, and of these the buyers get the benefit, instead of the collectors, who do not see them in bloom when collecting so as to be able to pick out the grand varieties that sometimes turn up, and are often worth more than the whole collection has been sold for. This is where the purchaser reaps the benefit. Of course, on the other hand, there is risk in buying imported plants, since there are many that do not turn out as represented, for which the collectors are often blamed ; and no doubt they are wrong in some cases, being deceived by the similarity in growth of different species, which can only be correctly determined when in bloom. Or in other cases a few plants only may be in flower, and the collector concludes that all growing there are alike, the foliage being of the same character, and the plants being sold as such, the unfortunate collector gets blamed for sending the wrong plant, though without his knowledge or intention. On the other hand there have been cases where plants have been sold under wrong names and accompanied by wrong descriptions, through the ignorance of the collector, who does not know the species he is describing. There are not very many collectors of the present day who have a thorough knowledge of Orchids ; and those who have not should get some one well acquainted with the species they have brought home to name them for them if possible ; or if not known they should be sold without a name, by which means the buyer takes his chance, and the collector gets no blame.

Those who have carefully studied the Orchids, and are acquainted with their peculiarities, can usually tell the species, unless it be something new, that has not come under their notice before ; even then it is often possible to give a very good guess, especially if the genus that it belongs to, the country it comes from, and such other points as become familiar to an observant eye, are known. The old adage, "Knowledge overcometh difficulties," justifies itself in this case. There are persons who have grown Orchids but a few years, and who think they know more than those who have had large collections always under their charge, and who are acknowledged to be close observers of the different species and varieties, and who besides have had the opportunity to become acquainted with all the old Orchids as well as the new ones. There is, if Orchidists would only admit it, a great deal to be learned from cultivators of these plants, as almost every person has some ideas of his own upon the subject, and these ideas can often be adopted by others with good results.

We are sometimes apt to think we can easily pick out the different varieties of families by their general aspect, but experience teaches us otherwise ; we may be able to do so with some kinds, but it is quite a chance, a great deal depending upon the locality and the situation in which the specimens are grown. In some places the bulbs will be short, in others quite different. *Cattleyas* and *Laelias*, for instance, are often brought home grown in this way, which makes it difficult to distinguish them, and there are also other kinds of Orchids, such as *Odontogloss*, to which the same remark applies. Sometimes a particular species may have dark-coloured bulbs, and at other times light green ones, and yet be of the same variety with the same flowers. This adds to the difficulty of identifying the different kinds. In the case of *Odontoglossum Alexandrae* there are some bulbs that will enable the observer to tell if the varieties are likely to be good as to form and size, but one cannot tell the colour. There are no doubt localities where the best species and varieties have been observed to abound, and when this is the case bad kinds very rarely appear in these spots, even through insect agency. Collectors should endeavour to avoid sending home the bad strains of these plants. Many of them are acquiring more knowledge of the localities where the best varieties are to be found, and they begin to see that the good forms pay the best, since they take up no more room than the bad ones, and buyers are willing to pay more for them instead of growing the poor varieties, of which there are so many sold in auction rooms. Even purchasers now appear to know more than they did of the quality of the plants by the appearance of the bulbs, though sometimes they are disappointed. On the other side there is the chance of picking up new ones among those which are not considered to be of the right sort, so that it is advisable not to destroy any until they have flowered ; even then, if the plant is weak, though the flowers may be poor, yet if there is form and substance in them, it is best to grow them on and flower them again, and then it is more than probable they may be approved.

ORCHID TREATMENT DURING GROWTH.

WE have in our Orchid houses plants from localities which vary much in every respect; some of them, moreover, produce their flowers early in spring, others in summer, and others again during the dull days of winter. It will therefore be readily understood that the period of starting into growth should vary also; but as for convenience sake we rest as many of our Orchids as possible in winter, because the days are cooler and shorter, the majority will begin to push up their young shoots as soon as the days lengthen and the sun gains increased power. This being the case, when the growing season commences, the temperature of the East Indian house—the house in which the greatest heat is maintained—should be increased to 65° by night and 70° by day, while by sun-heat it may be allowed to range up to 75° . As the days lengthen, so the temperature may be permitted to increase; and during the months of May, June, July, and August, it should range from 70° to 75° by night, and from 75° to 80° by day, or by sun-heat up to 85° , or even 90° , which will not do any harm, provided the plants have plenty of air, and are shaded from the direct rays of the sun. Great attention should, at the same time, be paid to the state of the atmosphere, as regards moisture. At all times of the year this is of much importance to the successful growth of the plants, since they derive the greater part of their subsistence from moisture in the air. Wherever, therefore, any of these plants are growing, the atmosphere should be well supplied with moisture, which is obtained by pouring water over the tables, walls, and paths of the house every morning and afternoon; this causes a nice moist heat to rise, which is of great value whilst the plants are in a vigorous state of growth, especially as regards the East Indian Orchids, such as *Aërides*, *Saccolabium*, *Vanda*, *Phalaenopsis*, *Dendrobium*, *Cypripedium*, and many others requiring a high temperature, with a considerable degree of moisture.

The Brazilian Orchids, many of which come from a cooler climate than the foregoing, and one not so highly saturated with vapour, of course require less heat and less moisture, but these should also have a considerable degree of warmth during their growing season; consequently the houses which are devoted to the Brazilian plants and to some of those from Mexico, should be artificially heated to about 60° by

night, and from 65° to 70° by day; and as the days lengthen the temperature may be allowed to increase, so that during the months of May, June, July, and August the night heat may range from 65° to 70° , and by day from 70° to 85° .

Of late years we have had so many additions to what are called Cool-house Orchids, that it is quite necessary there should be added another house specially for their cultivation, and which we may call the New Grenadan and Peruvian house. A plan of such a house will be found at page 45. This will accommodate a great number of plants from various high mountain districts, which may be grown together under the same treatment. We do not recommend ordinary greenhouses for Orchids, for our belief is, that very few Orchid growers will long uphold that treatment; and although we are told by collectors that many of the species of epiphytal Orchids are found in localities where the temperature falls so low at times that the plants are frequently covered with hoar frost, we do not think it expedient to subject them to such cool treatment in this country, neither is it possible for flowering greenhouse plants and Orchids to exist and do well in company with each other, for their requirements in atmospheric moisture are so different, that one set of plants or the other must fail. The house we recommend for the *Odontoglossums* and other genera and species that come from similar regions, and, consequently, require the same treatment, is precisely the same as others, only it must be kept at a lower temperature, say from 45° to 55° in winter, and from 50° to 65° in summer. This house should be well shaded from the sun with raised blinds (see p. 45), which will help to keep the heat down, as too much heat is dangerous for these cool Orchids. We have seen cool Orchids tried in nearly every aspect, in some instances with sad results, but we consider the very best house for the cultivation of the plants is one having a northern aspect, and the finest plants we have ever seen were to be seen in such an one. No fire-heat will be required in summer except on cold or wet days and nights, the object of then having recourse to artificial heat, being to keep the house from getting too damp, dampness without the proper degree of warmth being very detrimental to plants of this order.

There are but few Orchids that will do without heat altogether, except those that come from North America and other cold climates, and these will be treated on in a chapter by themselves.

ORCHID TREATMENT DURING REST.

AS the time of starting into growth varies considerably with different kinds, so also, as a matter of course, will the season of rest, although with but few exceptions it comes on during the autumn months. Rest, it has been elsewhere stated, is of great importance to Orchids, as well as to other things, indeed no plant will continue long in good health without it. Our practice is to give them a long season of rest, generally from November to the middle of February. During this time the temperature of the East Indian house should be regulated so as to keep it as nearly as possible at 60° by night and 65° by day, though by sun-heat the temperature may rise a few degrees higher, but air must then be given so as to keep it about 65° ; a few degrees of solar warmth above this point will, however, do no harm. A little air should be given on every fine day, in order to dry up the moisture; but the air must be admitted so as to pass over and between the hot-water pipes, so that it may become warmed on entering the house. In the case of those plants that come from the hotter parts of India, the temperature should not be allowed to go below 60° . The Brazilian house, which may also include all the species from the warmer parts of Mexico, should range from 50° to 55° by night, and from 55° to 60° by day; this should not be allowed to go below 50° at night. The New Grenadan, or cool-house, should not be allowed to get below about 45° at night.

Rest is induced by lowering the temperature, and withholding water. During this period the plants should only receive sufficient water to keep them from shrivelling. There are, however, some that will grow during the winter months, amongst which may be enumerated many species of *Aërides*, *Vanda*, *Saccolabium*, *Phalaenopsis*, *Zygopetalum*, *Laelia*, *Cattleya*, and similar genera. These will require water at the roots to keep them increasing, but care should be taken not to wet the young shoots, for if they get wet they are very apt to rot. Those that are growing should be placed at the warmest end of the respective houses, giving all the light possible.

Some Orchids are deciduous, losing their leaves after they have finished their growth. To this class belong *Cyrtopodium*, *Catasetum*, *Burkeria*, *Cycnoches*, *Thunia*, *Chysis*, some of the species of *Dendrobium*, *Calanthe*, *Pleione*, *Galeandra*, and many others. These should be always

so placed that they may have as much light and sun during their season of rest as possible. This is the only way to ripen their pseudobulbs, which causes them to grow stronger, and to flower more freely. When at rest the previously named kinds require but very little water, but when those without pseudobulbs like *Vanda*, *Angraecum*, *Aërides*, *Saccolabium*, and *Phalaenopsis* are at rest, they should never be allowed to get too dry at the root; the moss about them should always be kept a little damp, for the stems and leaves are very apt to shrivel if kept too dry, and this often causes them to lose their bottom leaves. Moreover, they require but a short season of rest. Those which are growing on blocks will require more water than those which are in pots or baskets, and if the weather be fine, should be watered about twice or three times a week, just so as to keep them moist, but in dull weather they will not require watering so often. Water should be poured over the paths and walks every fine morning, with a view to create a moist atmosphere, but the moisture in the house must be regulated according to the weather outside—a very important factor in the details of management. Thus, if the weather be dull outside, the house must be kept rather drier inside. The glass and roof should always, especially in winter, be perfectly clean, so that the plants at that season may have full light and sun. It is our practice, as soon as the season of rest commences, to wash every pane of glass in the house, both inside and outside, and also the wood and brickwork, for cleanliness is one of the main points to be kept in view to ensure good results.

ADAPTATION OF TREATMENT TO SURROUNDING CONDITIONS.

THERE is more variation in the localities in which we are placed than most of us imagine. In some parts of the country a nice pure mild atmosphere prevails during the greater part of the year, while in others there is a large proportion of cold and wet. There are other localities in which our plant houses are placed where they are exposed to high and cutting winds, and others in which they are sheltered on the side of a hill, or in some valley surrounded by hills and trees, on the south side of which they get the full benefit of the

sun and light all the year round. Of course plants located under the latter conditions have a greater chance of making robust growth, if they get suitable treatment, than those differently situated.

When plants are grown near large towns, where they have to contend with fogs and smoke during the autumn and winter months, it is often found that there is also a moister atmosphere to contend with during the season in which we get but little light and sun, in consequence of the shortness of the days ; in such cases this difference of climate must be guarded against, and the degree of moisture must be carefully studied so as to suit the different genera under cultivation. The rule we lay down must be followed—namely, to be guided by the conditions of the locality and its surroundings, and also by those of the locality in which the plants are found growing in their native country. A great deal depends upon attention to these apparently simple points ; and those who study their own localities, and the variation of climate to which they may be subject in different parts of the country, will find themselves more successful in their efforts to achieve good results.

There is also a great deal dependent on the positions in which plants are placed in our Orchid houses. They will often be found to thrive better in one part of the house than in another. This is found out by experience and persevering observation. If a plant does not do well in one spot try it in another, and when a suitable place is found let it alone. It is astonishing how differently various plants will thrive in different houses, whether it be Orchid houses, stoves, or warm greenhouses.

We have found this out by reason of want of space in our Orchid houses compelling us to place certain plants in houses having a different temperature, and in which it has turned out that they have succeeded far better, made better growths, and bloomed more freely. When we find they succeed in this way, we keep them under these conditions, treating them otherwise according to their especial wants. It must be the same with all plant growers. If success is to be obtained, the requirements of the plants must be studied, and the cultivator should never be satisfied until the requisite point for the particular plant to be dealt with has been gained. Always take notes of any successes which have been attained, and never think because

you have been successful that the plants will do by themselves and require no further care or study to keep them up to the same standard of health. Some persons seem to think that if they have grown their plants well once they can do so again without further trouble, but this is a great mistake; the same forethought and attention must be given as before; and we find that there is always something to be learnt by even the most successful of Orchid growers.

One thing we have always endeavoured to avoid, and that is following the advice of different cultivators; no doubt there is something to be learnt from all by all, but the advice should be cautiously taken. We have seen growers rush into new methods of treatment at once without studying their own appliances, their locality, and their surroundings, and the result has often proved to be failure. Even when one hears of new ideas which are to result in the accomplishment of some extraordinary success, it often happens that before the task is finished the failure is complete. The reason of this failure is hard to tell; they have overdone the matter, or have not kept up the treatment once practised, or there has been some change in the temperature, or in watering the plants, or perhaps insects have been working mischief. There are so many reasons for failure that it is difficult to tell which may apply in each individual case.

TREATMENT OF NEWLY-IMPORTED PLANTS.

WHEN unpacked, these should have every leaf and bulb sponged over, and all the decayed parts removed—not torn off, but cut clean off with a sharp knife. There are many insects that harbour about Orchids, such as the cockroach, and different kinds of scale, all of which are great pests. When cleaned they should be laid on dry moss and placed in some part of the Orchid house, where they are shaded from the sun. Water must be given very sparingly at first, as it is liable to rot them; too much of either light, heat, or moisture is at first very injurious. If they are put in moss or peat it should be gradually moistened, and when they begin to grow and make roots, they should be potted, or put on blocks or in baskets, but care should be taken not to have the pots too large, over-potting being dangerous.

We find it a still better plan to fill the pots nearly full of broken potsherds and charcoal, and to place the plants on the top of this until they begin to grow and make fresh roots. We have treated them in this way now for some years, and find the plants start much better, and they can be supplied with more moisture without fear of rotting them. By having recourse to this method they plump up much sooner, and break more freely, and the water passes away without becoming stagnant. After the plants have well started a little rough peat or sphagnum moss mixed with charcoal may be placed upon the crocks. By the addition of charcoal the soil is kept sweet and open, in addition to which the roots will cling to it.

If baskets are preferred the plants can be treated in the same way in them. If placed on blocks they require to be put in a moister atmosphere and to be often syringed, as they will of course dry up sooner than if in pots or baskets.

We have also found hanging up the plants in a moist house, without anything about their roots, a good plan where room is scarce; they will break freely in this way, but they are inconvenient to move about, as the roots get broken.

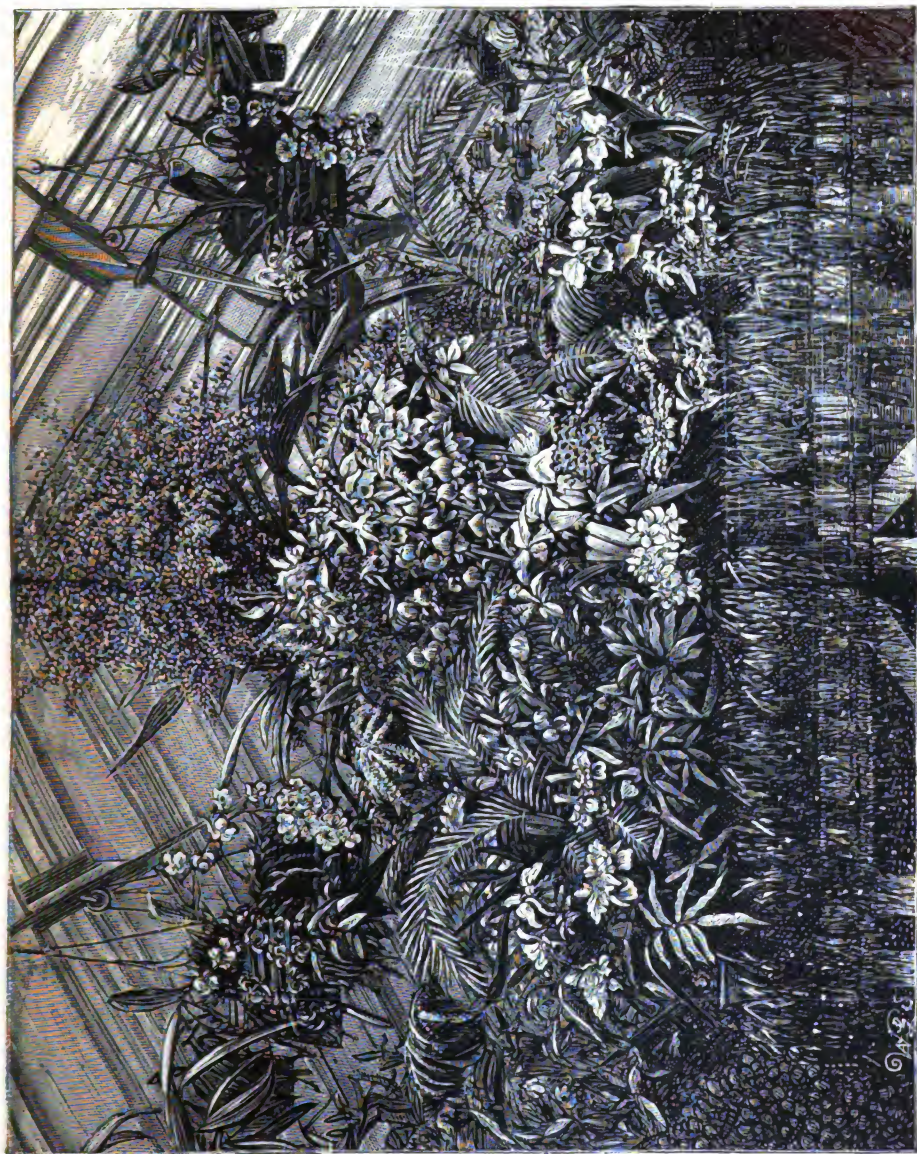
As soon as symptoms of growth are observable, those which come from the hotter parts of India should be put at the warmest end of the house, but they should not have too much moisture when first starting into growth. Those which come from the more temperate regions should be kept in the coolest part of the house. They should not be permitted to stand in the way of drip, as this frequently rots the young shoots as soon as they appear. Such plants as the species of *Vanda*, *Succolabium*, *Aërides*, *Angraecum*, *Phalaenopsis*, &c., we place so that the heart or crown hangs downwards, in which position no water can lodge about them. They should hang for about a fortnight, and may afterwards be put in pots, on blocks, or in baskets, with crocks until they begin to grow, when some moss should be placed about their roots; but they must have but little water until they begin to grow, and make new roots, after which they may be treated in the same manner as established plants. This is much the safest mode of treating these valuable Orchids on their first arrival in this country. Always be careful to keep the sun from them until they show signs of growth.

TREATMENT OF PLANTS IN BLOOM.

THERE are many Orchids that when in flower may be removed to a much cooler house than that in which they are grown, or even to a warm sitting-room. The advantage of keeping the plants during their period of flowering in a cool and dry atmosphere, rather than, as is frequently the case, in a hot and moist house, is, that in the former case the flowers last much longer than they do when retained in the warmer and moister atmosphere. Perhaps there are not many cultivators who have studied this point more than we have done, and we have never found the plants to be injured by this treatment. Some imagine that if they are put in a cool place they will suffer damage; but this has not occurred in our experience. During the time they are in a room or cool-house, the temperature should not fall below 50° at night; the room or house should be kept quite dry; and before they are removed from the stove they should be put at the coolest end of it; or if there are two houses, those that are in the hottest should be moved to the cooler one for a few days before being taken into the room, and they should be allowed to get nearly dry, that is, they should, while in the cool apartment, receive but very little water—only enough to keep the roots moist.

We prefer to have a house or easily accessible compartment set apart for the reception of flowering Orchids, where during their flowering season they can be treated according to their special requirements. If they are kept in the growing house they soon become spotted, and the damp injures the flowers and causes them to decay. We have such a house, and find it a great advantage for prolonging the flowering season.

The following are a few of those which we have tried in a sitting-room during the months of May, June, July, and August. We have kept *Saccolabium guttatum* in this way for five weeks, and *Aërides affine* for the same time. *Aërides odoratum*, *A. roseum*, and some of the *Dendrobiums*, as *D. nobile* and *D. coeruleascens*, we have kept in a room for four or five weeks. *Dendrobium Linavianum*, *D. superbum*, *D. pulchellum*, and *D. Wardianum*, last a much longer time in bloom if they are kept cool than if in a high temperature. Various species of *Brassia*, *Oncidium*, *Epilendrum*, *Odontoglossum*, *Cyrtorchilum*, *Trichopilia*, and *Mazillaria*, with *Lycaste Skinneri*, *L. aromatica*, *L. cruenta*, *Aspasia lunata*, and all



GROUP OF ORCHIDS, ARRANGED WITH FERNS AND FOLIAGE PLANTS IN THE
VICTORIA AND PARADISE NURSERIES.

From a Photograph.

the *Cattleyas* and *Laelias*, succeed well in a cool room or house, in which their flowers keep fresh for a much longer time. We have kept *Laelia majalis* in a cool room for four or five weeks, and *L. flava*, under similar circumstances, will also keep a much longer time in blossom than if left in the warm house.

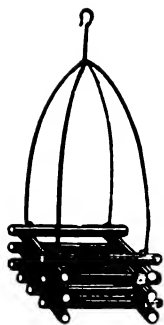
When the flowers begin to fade, the plants should be taken back to the Orchid house, where they may be placed at the coolest end, with plenty of shade; they should be kept in this position for about ten days, for if they are at once exposed to the sun they are very apt to become scorched.

Those flowers which it is desired to preserve should not in any case be wetted, as this will cause them to become spotted, and they will then soon decay. This is a very important point.

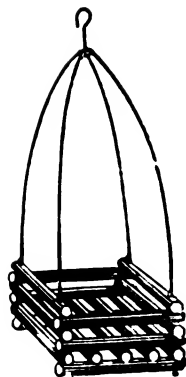
ON MAKING ORCHID BASKETS.

BLOCKS and baskets are most natural receptacles for growing the true air plants, such as *Vanda*, *Saccolabium*, *Aërides*, *Angraecum*, *Phalænopsis*, &c. When planted in baskets or on blocks, these send out their roots much more vigorously into the air, and suck up the moisture, whereas, if their roots are covered too much, they are very apt to rot.

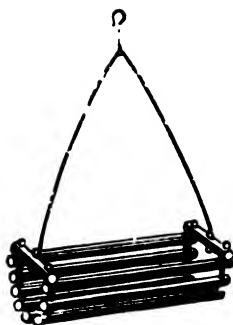
Various materials are used for forming baskets. Sometimes they are made of copper wire, which is very durable. Others are made from the ordinary material in use for making flower pots—these are very good indeed, and have a neat appearance. We have some very good ones of this description; they are round, about six inches deep, with holes in the bottom, and made of the ordinary pottery clay; they are, moreover, very useful, as they last a long time, and the plants do well in them. We have also for some years used small earthenware pans of different sizes for many kinds of Orchids with very beneficial results; they have three holes in their sides, and are attached to the roof of the house by means of wires; they are deep enough to allow of sufficient drainage to be put in them, as well as peat or moss, and we find the plants do well in them, much better than on blocks, as they do not dry up so quickly. We have saved many delicate plants in this way. We, how-



ORCHID BASKET WITH
EXTENDED ENDS.



ORCHID BASKET,
ORDINARY SHAPE.



THE BOAT.



SMALL ORCHID
BASKET.



THE CYLINDER.



THE RAFT.

ever, prefer generally those made of wood, on account of their rustic appearance, and besides, the roots like to cling to the wood.

We have found teak wood to be the best for making baskets, as it is hard and durable. The best baskets are those of square shape, made of proportionate even-sized rods without the bark, of which we give some sketches on page 28. The wood should be cut into short lengths according to the size of the basket required. They should not be too large, for there are objections to this: one is, they take up much space, and again the plants do not require much room, as a basket which is of a large size admits of too much soil about their roots. After the wood is cut into proper lengths, the pieces should be bored within one inch from the ends, taking care to have all the holes bored at the same distance: there should be four lengths of copper wire, one for each corner, and this wire being fastened at the bottom, should be put through the hole in each piece of wood, and be afterwards brought up to form the handle for suspending the plants from the roof. Copper wire only should be used in making baskets, for any other is probably injurious to the plants. Cylinders, rafts, boats, &c., made of teak, as shown on page 28, are now largely employed in Orchid culture.

The best kinds of wood for blocks are teak, acacia, apple, willow, pear, plum, maple, hazel, or cork. The wood should be cut into lengths suitable for the size of the plants; some copper nails should be driven in at each end, to which should be fastened copper wire to form the handle; wind the wire round each nail, and leave the handle about ten inches high. Small copper nails, driven in on the surface of the block, serve, by means of copper wire, to fasten the plants on to the blocks. There are some imitation blocks made of pottery ware which are very neat, and last a long time, but it is questionable if they are so congenial to the plants as wood. The great advantage of growing Orchids on blocks or in baskets, is that of being able to get the plants near the glass, where they may reap the full benefits of sun and light.

POTTING EPIPHYTAL ORCHIDS.

WHEN the season of rest is over, many Orchids will require re-potting, but in our practice we have not confined ourselves to that time only. No season can absolutely be determined on as the proper one for this operation. The months of February and March—that is, after the resting season, just before they begin to grow—are very suitable for potting some of them, or for those Orchids which start at a later period of the year this operation may be retarded. Those that do not require potting should be top-dressed with good fibrous peat and moss, the old soil being removed from the surface without breaking the roots of the plants. This operation affords the means of getting rid of many insects which harbour in the old soil or crocks. The pots should be thoroughly cleansed from the mould, moss, and dirt, which are too often seen covering them. Cleanliness is one of the greatest aids in the successful growth of Orchids. Previously to potting, the plants should not receive any water for four or five days.

Some species should be potted at a somewhat later period, that is, just as they begin to grow. All the species of *Phajus*, *Calanthe*, *Dendrobium*, *Stanhopea*, *Cyrtopodium*, *Brassia*, *Miltonia*, *Sobralia*, *Bletia*, *Oncidium*, and many others, require this treatment; whilst those of *Laelia*, *Cattleya*, *Saccolabium*, *Aërides*, *Vanda*, and similar plants, should be potted just before the commencement of their growing season.

The chief point to be attended to in all potting is that the pots should be well drained, the best material for drainage being potsherds or charcoal. Before potting, be particular to have the pots perfectly clean and dry, inside and out, and the broken potsherds should be washed. After this is done, select a pot in accordance with the size of the plant, but do not give too much pot-room. Some plants require shifting once a year, while it may not be necessary to shift others oftener than once in two or three years. If a plant becomes sickly or soddened with wet, the best way to bring it back into a healthy state is to turn it out of the pot or basket, and wash the roots carefully with some clean tepid water, cutting off such of them as are dead; and then to repot it, not giving it much water till it begins to make fresh roots. The best pots are those in ordinary use. Some employ slate pots, but they are not so good for Orchids as those made of clay.

In preparing the pots for large plants a small pot should be turned upside down in the bottom of the larger one, filling in around it with potsherds or charcoal broken up into pieces about two inches square for large plants, and using smaller pieces for smaller plants ; then introduce potsherds till within three or four inches of the rim, and afterwards put on a layer of moss to prevent the peat from settling down and impeding the drainage, and preventing the water from passing off quickly. This is of great importance, for if not attended to, the water will become stagnant, and the soil sodden, which is fatal to the health of the plant. The grand point to be observed in the successful culture of Orchids, as well as most other plants, is good drainage ; without that it is hopeless to try to keep the roots long in a healthy condition, and if these fail the plant goes with them.

The best material to be used in potting the different kinds of epiphytal Orchids, when grown in pots, is a mixture of good rough fibrous peat and live sphagnum moss ; during the last few years, however, we have seen surprising results from the use of the roots of the common Polypody (*Polypodium vulgare*), and having frequently used it to plants in our own collection with equally good effect, we would recommend its use to the attention of our readers who are desirous of bringing their plants to the greatest perfection, especially *Odontoglossums*, *Cattleyas*, and *Iaelius* ; the Polypodium roots should be cut up small and mixed with about half the quantity of sphagnum moss. The drainage material must be covered with some living sphagnum moss, in order to prevent the soil percolating into the cracks and checking the drainage. After the layer of moss is applied, fill up the pot to the top with this mixed compost, and bear in mind not to press the soil too closely, for we believe too firm potting to be very injurious. The peat should be broken into lumps about the size of a hen's egg ; and we always use broken potsherds or charcoal mixed with the peat. The plant should be set so as to be two or three inches above the rim of the pot, taking care to have the base of all the pseudobulbs above the soil ; then put some peat and moss on the top of the roots so as to cover them, inserting a few small pegs in the soil to keep it firmly on the pot. After the plants are potted fix a stick in the centre of each, to keep it firm. In shifting, carefully shake away all the old soil without injuring the roots. After potting, which should be done in the same way as recommended below for basketing,

be careful not to give too much water at first; but when the plants begin to make fresh roots they may have a more plentiful supply.

The best material to be used for basketing the East Indian kinds, such as *Aërides*, *Vanda*, *Phalaenopsis*, *Saccolabium*, and similar growing kinds, is sphagnum moss and broken potsherds. The basket should be suited to the size of the plant; it should not be too large, for it will not last more than a few years if made of wood, by which time, probably, the plant will require shifting into a larger one. There should first be placed a layer of moss at the bottom of the basket, then a few potsherds, and then the whole should be filled up with moss and potsherds mixed. Take the plants carefully out of the old basket, without breaking the roots, remove all the old moss, place the plant on the new material, about level with the top of the basket, fix a stick in the centre, to keep it firm, cover the roots neatly with a layer of moss, and finish off by giving a gentle watering.

Those plants that require billets of wood to grow upon should have live moss attached to the blocks, if by experience they are found to require it. Some species, however, do better on bare blocks, but they need more frequent waterings, as they are then almost entirely dependent on what is obtained from the atmosphere. The plants must be fastened firmly on the blocks, by means of copper or galvanised iron nails, which are to be driven into the block, and then, with copper wire, the plants must be firmly secured to the surface of the wood. As soon as they make fresh roots they will cling to the block, and the wire may be taken away.

POTTING TERRESTRIAL ORCHIDS.

THESE require a stronger compost than the epiphytal kinds, but do not need so much drainage. They should be potted just when they begin to grow, after the resting season. The compost we prefer to use for many of them is turfy loam chopped into pieces about the size of a walnut, leaf mould or peat, and a little rotten cow manure, all being mixed thoroughly together; but again there are many kinds which require the soil to be composed of loam and limestone, and indeed, will not grow without it, and this has been the cause of failure with many of

the terrestrial species; others again, peat loam and leaf mould and sand. The plants require good-sized pots; in the bottom of them put about two inches of drainage, on that a layer of moss, next some rough peat, and then the compost just mentioned, on which place the plant so as to be about an inch below the rim of the pot; then fill in with the compost, making it tolerably firm about the roots. Water sparingly at first, but by the time the young growths are some six inches high the plants will enjoy a good supply.

MODE OF PRODUCING BACK GROWTHS.

THERE are many of our Orchids that grow on year after year, and yet produce only one flowering pseudobulb annually; but some of the kinds, if the plants are cut, will produce back shoots or breaks, thus increasing the number of blooming growths, and the sooner making fine specimens. This is the way to produce such specimens as are to be seen from time to time at the London and provincial exhibitions. Some plants, such as *Cattleyas*, may be more readily treated in this way than others.

The operation is thus performed:—Take a plant that has back pseudobulbs, some four or five it may be, and cut the rhizome in two between the bulbs, not otherwise disturbing it, but allowing the bulbs to remain in the same place. The best time to cut most Orchids is during their season of rest, or just as they are beginning to grow. Any other Orchids that have pseudobulbs may be treated in the same way, when it becomes desirable to increase them, but it must be borne in mind that no Orchid should be cut except when in vigorous health, and not then except it is to produce back growth. The resting season is best for performing the operation, as when in vigorous growth they often produce two growths from the same pseudobulb, and continue doing so year after year, thus increasing in size rapidly, and in time making a fine specimen. When this is the case, if it is required to increase the stock of a particular plant, take off a piece just as it is starting into growth. The plant taken off can be potted at once, and placed in a shady place until it shows signs of growth, when it may be brought to the light. Many Orchids do not like to be disturbed, while there are those, some much more so than others, which readily submit to this treatment.

WATERING ORCHIDS.

THIS operation should be performed with great care, especially in the case of plants just starting into growth, for if watered too profusely the young shoots are apt to be affected by the atmospheric moisture, and become liable to what is termed damping off. Whilst, therefore, the shoots are young, only enough water should be given to keep the moss or peat in which the plants are growing just moist. As they advance in growth, more may be given; and when the pseudobulbs are about half grown the roots may receive a good supply. This, however, will greatly depend upon how the plants are potted. If potted according to the directions laid down in this book the water will pass away quickly, which is very essential to the well-being of the plants. We have known Orchid growers try many kinds of potting material, but have never seen any to succeed better than rough fibrous peat and living sphagnum moss, and the roots of the common Polypody; by using these materials as recommended, there is less liability of the plants suffering injury. Some growers use fine soil, mixed with sand and moss: this we consider bad for epiphytal Orchids, because it soon gets soddened and consolidated round the roots—a condition exceedingly obnoxious to this class of plants, which are not subjects to be tampered with. When plants are potted in this fine soil they require less water, and will also need the soil to be frequently renewed, but to this system we are entirely opposed.

Our practice is to shut up the Orchid house in the spring of the year about 3 P.M., and in May, June, July, August, and September about an hour later, when the heat of the sun is on the decline. We then usually give a gentle syringing with water as nearly as may be of the same temperature as that of the house. In fine weather, the temperature from sunheat will rise frequently as high as 95°, or even more; but we have never observed any injury to befall the plants in consequence of this heat, so long as the house was saturated with moisture. The atmosphere should be dried up once a day, if possible, by means of ventilation. In syringing be careful not to wet the young shoots too much. The syringe should be furnished with a fine rose attached, so as to cause the water to fall on the plants in imitation of a gentle shower of fine rain; but this syringing should only take place after a hot sunny day, and should never be carried to excess, for we have seen the ill effects of that practice

in many Orchid collections. The practice is indeed very dangerous, and growers often wonder at their plants not looking well, when it is entirely due to over-syringing. Nevertheless, water, judiciously applied, is one of the most important items in the culture of these valuable plants. Those of them which are growing on blocks of wood should be syringed twice a day in the summer time; and we also find it beneficial, during the growing season, to take the blocks down about twice or three times in a week, and dip them in water till the surface of the wood and the moss are thoroughly soaked. Plants in baskets should likewise be taken down and examined, and, if they are dry, they should also be soaked in a similar manner. This is a good mode of getting rid of many hurtful creatures that harbour in the moss, such as the woodlouse and the cockroach, which, when the moss is plunged and kept for a while under water, will come to the top, and then may be easily killed.

We have elsewhere observed (*Orchid Album*) that "rain water is the best for Orchids and for all kinds of plants, this being the water supplied in their natural habitats. Rain water is easily to be obtained by providing tanks under the stages, and allowing the rain water to enter from the roof. In this way no room is lost. A pump should be affixed, in case the water should get low in dry weather, by which means it can be easily raised to the required height. The plan we adopt is to have a deep cemented tank in the centre of the house under the stage, so that the top may be open; this allows the water which is standing in the tank to become somewhat warmed by contact with the atmosphere of the house, which is very beneficial. In fact, Orchids should never be watered with water that has not had the chill taken off, as cold water, especially in winter time, causes spot, and may rot the growths, and injure the roots. Into this tank the rain water runs from the roof, and as we have the New River Company's water laid on as well, when rain water is scarce we fill up with this, and thereby have a mixture of rain and hard water.

"There can be no doubt that Orchids, like other plants, are particular as to the fluids given to them to nourish their roots. We often hear growers say that the water obtainable in the particular locality where they reside is hard, and that their plants do not thrive as they should do. We can fully sympathise with these men, as we know that hard water is bad for Orchids as well as for other plants. Hard-wooded plants,

especially, will not thrive if the water they receive does not suit them ; but it must be borne in mind that these plants have fine hair-like roots, and are much sooner killed than Orchids, which have thick fleshy roots. When conversing some time ago with an Orchid grower from the North of England, who told us that his plants were not doing well, that he could not keep the sphagnum moss alive, which he attributed to the use of hard water, and that he consequently put up a cistern for rain water, and employed that, we were not surprised to hear that the result had been to improve the health of the plants, and that the moss was now growing luxuriantly.

“There is a great difference between different hard waters ; some contain a quantity of iron, while others contain lime ; these latter when used for syringing leave white marks upon the foliage. We believe water containing chalk and lime to be beneficial to some kinds of Orchids, especially *Cypripediums*, in fact, some growers use chalk or broken limestone mixed with charcoal and peat to grow them in, and they succeed very well in it. We have frequently seen distinct traces of lime on imported *Cypripediums*. An importation of *Cypripedium Spicerianum*, received some time ago, was literally covered with lime deposit, owing to the plants having been found growing in the fissures of limestone rocks, where the water trickled down upon them. We should think that water containing iron would be most injurious to Orchids.”

Rain or pond water is the best for the plants, but if this cannot be obtained, and water from a spring must be employed, it should be well exposed to the influence of the atmosphere before being used ; it should also be allowed to stand in the house for a considerable time, previously to its being required for the plants, so that it may become warmed to about the same temperature as the atmosphere in which it is to be used. This indeed should be done in all cases.

Slate cisterns are very useful for collecting the rain water which falls on the roof ; and such cisterns on each side the house placed over the hot-water pipes will keep the water at the same temperature as that of the house. If there is not room for the slate cisterns on the pipes, a cement tank under the centre table will answer the same purpose, and should have a hot-water pipe run through it, if possible, so as to keep up the temperature of the water, which is a very important point in maintaining the healthy growth of the plants.

Over watering is very detrimental to nearly all the species of Orchids in cultivation. It must be remembered that although in their native habitats they get a great deal of rain during the growing season (which is generally the rainy season), it is very different in our houses, where they are closely confined, and evaporation does not take place to such an extent as it does in their native homes, where they are found growing on trees and rocks and on the ground. In these positions they get all the winds that blow, and which after a shower quickly dry up the superabundant moisture. More Orchids are lost by over watering than many people imagine ; and although they may not show it at the time, it tells upon them afterwards in the shape of disease.

PROPAGATION OF ORCHIDS.

THERE are different modes of propagating the various kinds of Orchids. Some are easily increased by dividing them into pieces, or by cutting the old pseudobulbs from the plants after the latter have done blooming ; such plants as *Dendrobiums* are increased in this way. The best time for dividing the plants is just as they begin to grow, or when they are at rest. They should be cut through with a sharp knife between the pseudobulbs, being careful not to harm the roots ; and each piece should have some roots attached to it. After they are cut through, they should be put into some shady part of the house, without receiving much water at the roots till they have begun to grow and made fresh ones ; then they may be parted, potted, and have the regular supply. *Dendrobium nobile*, *D. Pierardii*, *D. Devonianum*, *D. Falconerii*, *D. superbum*, *D. Wardianum*, *D. crassinode*, *D. superbiens*, *D. bigibbum*, and sorts of similar habit, are easily propagated. This is effected by bending the old pseudobulbs round the basket or pot in which they are growing ; or by cutting the old flowering bulbs away from the plant, and laying them on some damp moss in a shady and warm part of the house, with a good supply of moisture. In either case, they will break and make roots and new shoots, after which they may be potted or put in baskets. Such kinds as *D. Jenkinsii*, *D. aggregatum*, *D. formosum*, *D. speciosum*, *D. densiflorum*, *D. thyrsiflorum*, *D. suavissimum*, and similar growing sorts, are increased by simply dividing the plants.

The species of *Aërides*, *Vanda*, *Angraecum*, *Saccolabium*, *Camarotis*, *Renanthera*, and plants of similar habit, are propagated by cutting off the top just below the first root or by taking the young growths from the base of the stem ; the latter, after they have formed roots, should be cut off with a sharp knife, and put on blocks or in baskets with some sphagnum moss, and kept in a warm and damp part of the house, without receiving much water till they have begun to grow, when they may have the usual supply.

The *Odmoglossums*, *Oncidium*s, *Brassias*, *Cyrtochilums*, *Zygopetalums*, *Sobralias*, *Trichopilias*, *Stanhopeas*, *Schomburgkias*, *Peristerias*, *Catasetums*, *Miltonias*, *Lycastes*, *Bletias*, *Laelias*, *Cattleyas*, *Galeandras*, *Epidendrums*, *Barkerias*, *Cyrtopodiums*, *Cymbidium*s, *Coelogynes*, *Calanthes*, and the species of *Mormodes*, *Leptotes*, *Cynoches*, and *Coryanthes*, are all propagated by dividing them into pieces, each having a portion of roots attached to it, and a young bulb or growing point. Such plants as *Calanthe Veitchii*, *C. Turnerii*, and *C. vestita*, often produce bulbs on the top of their last year's growth, which can be taken off after they have done blooming, and put into sand or some other suitable material until potted in the ensuing spring.

Thunia alba, *T. Bensoniae*, *T. Marshalliana*, and similar growing kinds, are very easily increased. The best way is to cut off the old pseudobulbs after the young ones have begun to flower, that is, just before the plant has made its growth. These pseudobulbs should be cut into pieces about six inches long, and then put into a pot in some silver sand, with a bell-glass over them, till they have struck root and begun to make their growth, when they should be potted in some fibrous peat and moss, and should have good drainage to carry off the water required in the growing season.

Some of the *Epidendrums*, such as *E. cinnabarinum*, *E. crassifolium*, *E. erectum*, and similar growing kinds, which form plants on the tops of the old flower stalks, are easily propagated ; the young ones should be left till they have completed their growth, and then be cut off and potted, when they will soon make good plants. Some *Dendrobiums* will also form plants on the tops of the old pseudobulbs, and they should be treated in a similar way.

RAISING ORCHIDS FROM SEEDS.

MANY Orchids have recently been raised from seed in this country ; yet it was not until within the last few years that cultivators succeeded in raising seedlings of these singular subjects. At the present time the number is considerable, and we are every day becoming more familiar with seedling varieties and hybrids which have been raised in English gardens. To Mr. Dominy, Mr. Seden, Dr. Ainsworth, and Mr. R. Warner belong the credit of producing some of the very beautiful hybrid forms of this order, which are now in cultivation. Several other cultivators are now exercising their talents in the same direction, amongst whom may be mentioned Sir Trevor Lawrence, Bart., Mr. Cookson, Mr. Bean, Mr. Drewett, Mr. Ingram, Mr. Measures, Mr. Mylam, Mr. Osborne, Mr. Tautz, Mr. Winn, and many others who have made a goodly addition to the hybrid plants now in cultivation, and there is unquestionably a large field open for all who take an interest in hybridising this singular and beautiful tribe of plants. Some very fine *Cattleyas*, *Laelias*, *Dendrobiums*, and *Cypripediums*, have been raised by the Messrs. Veitch & Sons, and great credit is due to the energy they have displayed in this branch of Orchidology. Many of these seedlings are very free-growing, but it will be several years before they can be generally distributed, as they are so slow in propagation. We now refer more particularly to *Cattleyas* and *Laelias*.

Some time ago a gentleman remarked to us that he should like to be in a country where the Orchids grew in a wild state, in order that he might have the chance of hybridising them ; his ideas were, that something really good might thus be obtained, and no doubt he was right, for considering how seldom it is that we flower two Orchids alike, it may be concluded that many of our imported plants, though taken for the same, are natural hybrids or seminal variations, and of this we have a good illustration in a hybrid *Vanda* raised by a lady at Singapore between *V. Hookeriana* and *V. teres*. We have seen at least two dozen varieties of *Cattleya Mossiae* in bloom at one time, some having white petals and rich crimson lip, others rose-coloured petals and yellow lip, but all differing more or less from each other. In fact nearly all the species of Orchids yield varieties. Four flowers taken from four different plants of *Phalaenopsis amabilis* were

once brought to us, and no two of them were exactly alike. The same may be said of *Phalaenopsis Schilleriana*, of which we have seen many plants in bloom, varying much in the colour of the flower and in the shape and markings of the leaf, all however being handsome. In a wild state, varieties appear to be unlimited, crossed and recrossed, as they doubtless are, by insects. Who, for instance, would have thought, in years gone by, of importing so splendid a plant as *Phalaenopsis Schilleriana*, which is beautiful not only in blossom but in foliage? Then came *P. Stuartiana*, *P. leucorrhoda*, *P. violacea*, and many others; and we are told there exists a still finer species, with scarlet flowers! Let us hope the latter will soon be added to our collections; what a contrast it would make with the white and mauve coloured kinds now in cultivation! Mr. Dominy and Mr. Seden have succeeded in raising many choice varieties of *Cattleya*, *Calanthe*, *Cypripedium*, *Goodyera*, *Dendrobium*, *Masdevallia*, and have succeeded in crossing different genera, &c.; Mr. Mitchell has raised the fine *Dendrobium Ainsworthii*, Mr. Cookson has raised the lovely *Phajus Cooksoni*, *Dendrobium Venus*, and many good *Cypripediums*, Mr. Bleu the lovely *Cattleya calummata* and *Miltoniopsis Bleuana*; and some *Cypripediums* have been raised by the late Mr. Cross, formerly gardener to the Dowager Lady Ashburton at Melchet Court. Let us hope these hybridists and others may persevere in the good work, and produce something new in other genera. Many kinds seed freely if the flowers are fertilised, and they produce many seeds in a pod.

The seed, having been gathered as soon as ripe, should be sown at once, but it requires great care, as it is not so easy to raise as that of many other plants. Some of the kinds are a long time germinating; we have known Orchid seeds to lie twelve months before the plants make their appearance. It is highly interesting to watch their gradual development, from the tiny germ to the first small pseudobulb, and so on up to the flowering stage. The best place in which to sow the seeds is on the top of an Orchid pot, where they will not get disturbed, and where the peat or moss is in a rough state; do not cover the seed, but give a little water with a fine rose pot, just to settle it. The rough blocks of wood on which another plant is growing also afford a capital situation to sow upon, but the surface should always be kept a little moist. After germination, those which were sown on pots should

be placed in small pots quite close to the inside edge, and when the plants get strong enough, they may be potted singly in the material already recommended, or be placed on blocks. In potting and taking them up, great care must be used not to injure the roots. We also think it is quite a wrong practice to lift and to pot these seedling plants separately, when they are too small, for they cannot use the soil, and before they have gained sufficient size to do so, it becomes sour and soddened, thus necessitating another change, which is injurious to the plants.

One of the surest roads to success in hybridising is to select the finer species or varieties only for experiment, though it is possible that there may exist in a flower of inferior merit some quality which would induce the operator to undertake its improvement, or endeavour to transfer the desired feature to some more favoured kind. It is highly desirable that many more growers should turn their attention to the raising of hybrids, not only with the view of obtaining finer flowers than we already possess—though that would be a real advantage; but for the additional purpose of raising sorts that might succeed in cooler houses. *Odontoglossum grande* and many others, for instance, do better in a cool-house than in a warm one; how desirable it would be to communicate this quality to others. *Cypripedium insigne* will thrive well in a greenhouse, and if we could cross this with some of the other kinds, such as *C. superbium*, *C. hirsutissimum*, *C. Louii*, or *C. barbatum superbum*, something good might be the result. There are also several hardy *Cypripediums*, such as *C. macranthum*, *C. pubescens*, and *C. spectabile*, which might be induced to play an important part in the operation. At least, the several hybrid *Cypripediums* which have flowered in the establishment of Messrs. Veitch fully bear out our argument. *Phajus grandifolius* and *P. Wallichii* are likewise two noble plants for winter decoration, which do well in a warm greenhouse, and may probably be the means of producing some very ornamental plants, if crossed with various *Calanthes*.

Since the publication of the sixth edition of this *Manual*, numerous Orchid growers have been turning their attention to the raising of seedlings, and quite a host of beautiful new kinds have been added to the long list of garden favourites.

ORCHIDS FOR ROOM DECORATION.

LYCASTES thrive admirably in a cool-house, *L. Skinneri* for instance, which is one of the finest, and of which many splendid varieties are now cultivated. This plant is reported in the *Gardeners' Chronicle* to have been kept in a room in flower for seven weeks. We, ourselves, have had plants of this *Lycaste* all the winter in a cool-house, where they have flowered in great abundance, as many as from thirty to fifty blossoms being open at one time. Indeed, we exhibited a plant of it at one of the Regent's Park spring shows with as many blossoms on it as we have just mentioned, on which occasion a medal was awarded for its magnificent flowers and colour. Particular care must be taken, however, to keep the flowers dry when in a cool-house or room, or else they are apt to become spotted.

"*Lycaste Skinneri*," says the *Gardeners' Chronicle*, "seems about to have as great a future as the Tulip. Already something like a dozen varieties of colour are known among its exquisitely beautiful flowers, and we can entertain no doubt that it will break into plenty more, especially if recourse be had to hybridising. From deep rose to a tint only less white than the Hawthorn we have a complete set of transitions, and this is a plant conspicuous for its fine broad foliage, and glorious in its ample floral garments. It is not, however, wholly on account of its disposition to reward us by an endless variety of colour, and perhaps form, that we wish to draw attention to *Lycaste Skinneri*, but because of all tropical Orchids it is one of the hardiest in constitution and most easy to cultivate. This has been very decisively shown by some experiments of the late Mr. Skinner, to whose untiring energy we English owe this and many other treasures. In a note received from him, he writes as follows:—

"On the 2nd February, 1861, I received from Mr. Veitch a fine specimen with seven flower spikes all out, and took it to Hillingdon Cottage, placed it on the drawing-room table in an ornamental pot, and gave it every three days or so about four tablespoonfuls of water, occasionally wiping the leaves with a wet sponge when the dust got on them. There this plant stood throughout the severe weather we had—a fire in the room only during the afternoons and evenings, and on some days none at all. It never showed the least decay until the 16th May, when it was for some purpose or other put into the greenhouse, and our

gardener sprinkled water over it along with the other plants. Next morning I was shocked to see the flowers all with brown spots and withering. On the 18th May I took it back to Mr Veitch, still in full bloom (seven spikes), to bear testimony to its condition, and it lasted, though then much injured, a week on the stand by the seed-room in their place. This experiment induced me to try again. On the 18th December, 1861, I brought down to this place two fine plants of the *Lycaste*, and two plants of *Barkeria Skinneri*, both in full bloom. Having been absent (with the exception of three days in January) since, I have had no control over them, but my sister followed the same plan as at Hillingdon, only with the *Barkerias*, which are attached to blocks, dipping the whole block into the water for a few minutes every four or five days, according as we have much or little sun, and as the plants are now before me I give you their condition. One of the *Barkerias* is as perfect as the day I brought it here; the other has all gone off within the last few days. One *Lycaste* is perfect, and as beautiful as the day I brought it here; the other has *lost* one flower, I fear by some accident, the other flower still good, but evidently a little 'shady'; this plant has two flower stems coming on, and would bloom in a fortnight if we pushed them by more moisture. I expect frost has got on it after watering, for it stands close to the window in the drawing-room, and this room, though smaller, is similarly treated to the one at Hillingdon—fires in the afternoon and evenings, with a southern aspect. What a treat to me is this, and I think you should know it, for people have said—'I love Orchids, but hate the stew-pans one has to view them in.'

"It is clear that for *Lycastes* and *Barkerias* 'stew-pans' may be dispensed with. Plenty of Orchids like these are to be found in our gardens, brought from the Highlands of Mexico and from Central America. It is also probable that mountain species of India, such as the delicious *Coelogynes*, will thrive under the same treatment, and, if so, one more class of enjoyments is provided for the lovers of flowers.

"Surely this is news worth telegraphing through the whole horticultural world! What a charm for a sick-room! What a pet for the poor invalid who has nothing to love except her flowers! Imagine the pleasure of watching the buds as they form, visibly enlarging from day to day, until they reach the slow unfolding of the perfect blossom, and then the delight at seeing it some morning, stimulated by even a

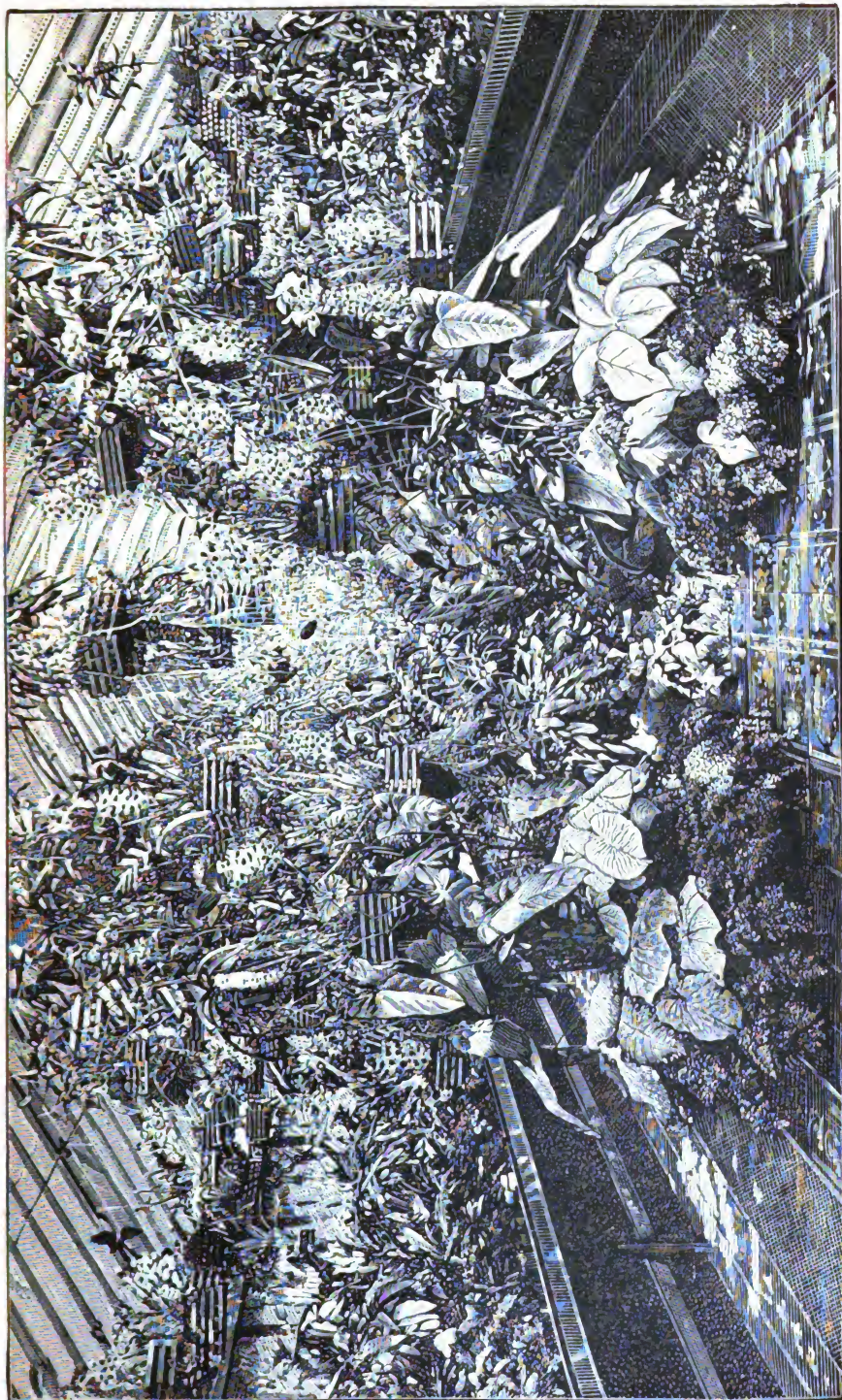
winter's sun, suddenly throwing back its green cloak and displaying the wondrous beauty of its richly tinted lining. It is almost worth being ill to enjoy such a scene."

Since the late Mr Skinner wrote this there has been quite a change in Orchid growing. Large quantities of the cool growing kinds have been introduced, so that now persons possessing only a pit or small greenhouse with a little heat in winter can indulge their tastes in the possession of some of these beautiful and most interesting plants. All these might be kept in rooms while in flower.

Encouragement like this must surely add new life and vigour to Orchid growing. We hope that as a consequence many may be induced to try their skill. The great secret is to secure robust growth in summer, when there is plenty of sun heat in our greenhouses; but for further and particular instruction, we must refer to the notes on the cultivation of the *Illycaste*, and to the chapter on the Treatment of Plants in Flower.

ORCHID HOUSES.

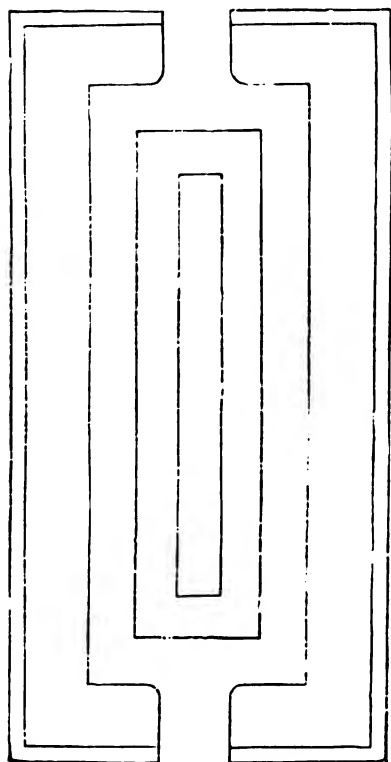
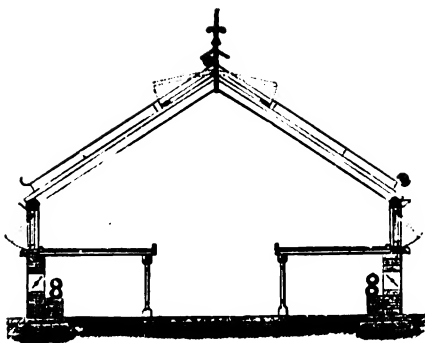
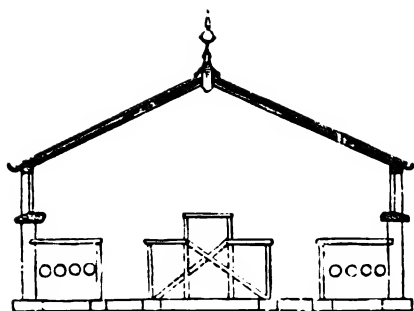
IT is not absolutely necessary to build a house for the cultivation of Orchids, for in many cases they are grown most luxuriantly in pine stoves, or in houses principally devoted to flowering and ornamental-leaved plants. Where only a few plants are cultivated, such a plan is by no means objectionable, for we have found many of our Orchids do well in such houses, which fact has only been discovered by those who have been compelled to have recourse to such means. Where, however, a large collection is to be cared for, it is quite essential that houses should be specially set apart for them, and in our opinion the best houses are those with span roofs facing east and west (see page 45). Ground plans and end sections of such houses are here given. The largest sized span-roofed house should not be more than ten or eleven feet high in the centre, seventeen or eighteen feet wide, and about a hundred feet long, with two glass partitions to separate it into three compartments—one for plants that come from the East Indies, which ought to be nearest the boiler, the second for those that come from Brazil, and therefore require an intermediate temperature, and the third for the Mexican species, which



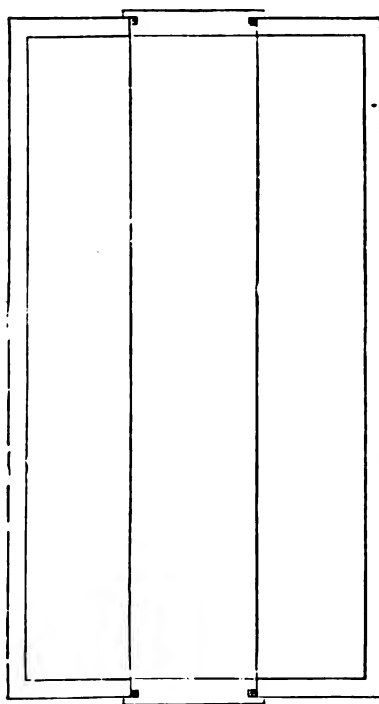
ORCHID HOUSE AT GOUVILLE, FRANCE, THE SEAT OF M. LE COMTE A. DE GERMINY,

Shewing the effect of Orchids grouped with Stove Plants arranged in a natural style.

From a photograph.



GROUND PLAN AND SECTION OF ORCHID HOUSE.



GROUND PLAN AND SECTION OF COOL ORCHID HOUSE, SHOWING MODE OF FIXING RAISED BLINDS.

require plenty of heat and sunlight. There should be upright sashes on both sides of the house, with glass from twelve to fifteen inches high, but not made to open. Many Orchid growers object to side sashes, and sometimes recommend brickwork up to the spring of the roof, but that is not, in our opinion, the best plan; on the contrary, we would advise any one about to build an Orchid house to have upright sashes on both sides and at each end.

For cool Orchids either a span-roofed structure or a lean-to may be used. If a span-roofed house be decided upon, the same height of ridge should be given as that recommended for Brazilian and Mexican kinds, but it need not be so broad, say about twelve feet, having two side tables with a path up the centre, and two rows of pipes on each side, with side ventilators in the brickwork made to open, as well as top ventilators. We give a plan and section of such a house on p. 45, to explain more fully what we recommend.

From experience we have found that Orchids do best with abundance of light, which is the only way to ensure good strong ripe pseudobulbs fit for flowering. Small houses of the size recommended are best. In different parts of the country there exist large lofty houses, but in no instance have we seen plants growing well in them; such houses require a great amount of fire heat to keep them at the proper night temperature; *Cattleyas* and many other Orchids do well in them, but the sized house here recommended is more suitable for the gardens of amateurs about towns.

We have used single roofs for nearly forty years, and have always found them to answer well, but a few years ago double-roofed houses were adopted by many Orchid growers. In no instance did any improvement in the health of the plants take place, but rather the contrary, the result being that after a time the system was abandoned, it having been found (in some cases by dearly bought experience) that double-roofed houses were a complete failure. We never had faith in the double-roofed house; and it appeared to us strange that growers of these valuable plants should adopt such new ideas before they had been well tried on a small scale by those who understood the treatment of this race of plants.

The houses in our Nurseries are of the size recommended above, and no Orchid houses could answer better. They have been built and used more than thirty years, and are well worth inspection. They afford

plenty of room for the plants to show themselves to advantage, and they have likewise roomy paths, which is a great convenience, for nothing is more unpleasant than not being able to inspect the plants with ease and comfort. The inside dimensions of these houses are forty-five feet long, eleven feet high in the centre, and eighteen feet in width ; there is in each a table six feet wide up the centre, and a path all round three feet wide, with side tables three feet wide, formed of slate. The floor is concreted, three inches thick, and then covered with Portland cement and sand, which forms a capital surface. The whole is heated by hot water, distributed in four rows of four-inch pipes on each side in the East Indian house, and three rows in the Brazilian house, and each having valves to stop or turn on the water as required. On both sides of the Orchid houses are upright sashes, as recommended above, glazed in the manner as set forth in the chapter on Glazing ; there are three ventilators on each side in the brickwork, close to the hot-water pipes, and one at the end over the doorway. There are four small top-sashes, two on either side, which open with hinges, and are furnished with ropes inside to draw them up and down ; these are found very desirable to let out the over-heated air. These ventilators have been in use for several years, and are found very useful ; for if cold wind blows from the one side the other can be opened, so that the chilly air, which is very injurious, does not reach the plants.

Complaints have been frequently raised against Orchid houses, on account of their excessive heat and moisture, which quite prevents the enjoyment of the beautiful flowers grown in them. This objection has now lost much of its force, because we grow Orchids in a much cooler temperature, yet in the case of the East Indian house there is still some truth in it. The evil, fortunately, is one which can be readily remedied. To that end a small house should be erected for, or a small division at the end of each Orchid house assigned to, Orchids in bloom, or a portion of the conservatory should be enclosed, as is recommended in the chapter on the Treatment of Orchids in Bloom. Here, with some ferns and a few other ornamental-leaved plants as a background, the blooming Orchids should be placed, and here they may be enjoyed to the full, since the place may be kept quite cool, so that while the most delicate constitution will receive no injury, the blossoms will remain much longer in perfection. This system is adopted by many cultivators of Orchids, and is a source of

great pleasure to them. By an arrangement of this kind the beauties of such plants as *Calanthe vestita*, *Limnoides rosea*, the *Pleiones* and plants like them which are destitute of leaves at the time of flowering may be greatly enhanced, as the ferns and other plants can be made to hide the deficiency; and in summer the Orchids in flower will retain their full beauty for a much longer time, if kept well shaded and cool. This system of decoration is well carried out by Mr. O. O. Wrigley, of Bury. A long span-roofed house, which forms an entrance to the other houses, is devoted to this purpose; it has a central path, with a table on each side, and the blooming Orchids being brought here and intermixed with ferns, flowering and ornamental-leaved *Begonias*, *Poinsettias*, *Euphorbias*, and many other plants, according to the season, the effect produced is charming.

GLAZING OF ORCHID HOUSES.

IN the houses already referred to, the 21 oz. English glass is used, being the best for the purpose because not easily broken. The squares of glass in the roof are two feet six inches long by nine inches in breadth; those in the upright sashes at the sides are fourteen inches long by nine inches wide. The laps are very close. We remember seeing an Orchid house much injured after a hail-storm, a large portion of its valuable contents being nearly spoiled; in this instance the glass used was only 16 oz., whereas, if it had been 21 oz., it would most likely have withstood the storm. We therefore recommend 21 oz. glass, or even a heavier kind, as not being likely to get broken by cleaning or otherwise. Too large squares are bad, as they are apt to get broken by frost. The upright glass at the sides ought to be of the size stated above, to correspond with that in the roof and also in the ends and the door. The sash bars should have a small groove down them to carry the condensed moisture to the bottom, in order to prevent it from dripping on to the plants. Or small pieces of zinc nailed to the bars serve to form a sort of gutter to carry off this moisture, and thus prevent drip, which is very injurious to the plants in cold weather; even when the weather is warm the foliage may be injured, and a deal of harm may be done by drip.

HEATING ORCHID HOUSES.

FOR effecting this, nothing is better than a hot-water apparatus. We recommend four-inch pipes, and to put in an excess of piping rather than too little. There is nothing saved by economising the piping, and it is far better to spend a little more money for material at first, than have to make additions afterwards. By having plenty of pipe a less rapid combustion is required, which is better for the plants, and the expense is saved in fuel in a very short time. We therefore advise four rows of pipes on each side for the East Indian house, three for the Brazilian, and two for the house devoted to those species from New Grenada, Peru, and some parts of Mexico; by having four pipes for the plants requiring most heat, one does not require to drive the fire so much on a frosty night. We never raise steam from the pipes; for plenty of moisture can be obtained without it, by pouring water on the tables and paths, which we consider much better than steam discharged on the plants direct from the hot-water pipes. At the same time, we do not by any means condemn the use of evaporating troughs during the summer months, for these will diffuse throughout the house a most congenial moisture, highly beneficial to the growth of the plants, and the effects of this moisture is very different from that of scalding steam.

The boiler should be placed outside of the house, and not set underneath, which is a very bad system. We remember going to see a collection of Orchids where the boiler was so situated, and had been put there to economise heat. The plants were growing very freely at the time, and upon remarking that we should be afraid of smoke getting into the house, we were told there was no fear of that, "for the boiler was well covered over." Only a few months afterwards on calling to see the same collection, we found our fears were realised; the smoke had got into the house, and had spoilt many of the plants. This is merely mentioned to show the ill effects of a boiler being so set that smoke can get into the house. When outside there is no fear of such a disaster.

There is more importance in the setting of a boiler than many people imagine, and there are many ways of effecting the operation. It is, however, always best to secure the services of a good bricklayer who has had experience in setting the different kinds of boilers, as they for the most part require different treatment. Many a boiler has been condemned

through its being badly set, and the work having been indifferently carried out. There is another important point in connection with boilers, *i.e.*, they should be kept clean, and the flues freed from soot and dust, which not only greatly impedes the draught but diminishes the heating power. Care should also be used in stoking the fire, for a good deal of fuel may be wasted by injudicious management, more especially as some kinds of boilers do not take as much fuel as others. The man in charge, if he takes a proper interest in his work, will however soon become acquainted with the requirements of the different boilers under his management.

Hot-water boilers are now made of numerous shapes and patterns, and as most cultivators have some predilection in this matter, we leave them to make their own selection. There are, however, many things to be thought of before deciding this question. If the locality is such as to render it impracticable to dig far down into the ground before reaching water, or to prevent a drain from being put below the boiler, then the upright form of boiler is neither suitable nor safe; for in cases of flood during winter, the water may rise and put out the fire unless the stoke-hole is made watertight, which is usually a troublesome and expensive process. We, however, by no means depreciate boilers of this type. Then we have cannon boilers, tubular boilers, common saddle boilers, terminal saddle boilers, tubular arched saddle boilers, double L saddle boilers, Gold Medal boilers, improved tubular boilers, Cornish boilers, cruciform boilers, duplex compensating boilers, and boilers that require no setting, the makers of each and all being able to give what are to them satisfactory reasons why the particular form they adopt is the best. That we have this diversity amongst boilers is no doubt a great advantage, for one that may work admirably in one place, may not, through some peculiarity of place or position, be so thoroughly satisfactory in another. Moreover, the fuel most readily available in one place, and which may suit one class of boiler, may not be so readily obtained in another place, and therefore those who are so situated will naturally have recourse to a boiler adapted to consume the fuel which they can obtain for heating it. When a good draught can be obtained we have found anthracite coal the best fuel for most kinds of boilers; it is more lasting than coke, is smokeless, and gives out twice as much heat, and is altogether a cheaper and much better article, although more costly in the first outlay.

VENTILATION OF ORCHID HOUSES.

THIS is of itself of great importance, but the manner in which it is carried out is equally if not more important; for if cold chilly air be allowed to pass among the plants they will not thrive, and all the care which has otherwise been bestowed on them will be in vain. The means of ventilation should be provided by ventilators fixed near the ground, close to the hot-water pipes, in order that the air may be warmed as it enters the house, and before it reaches the plants. Fresh air should also be admitted by underground pipes, so that in cold weather a current of pure air may be maintained. This can be accomplished by laying drain-pipes from the outside under the foundation to the inside under the hot-water pipes, so that the air is warmed immediately upon entering the house by passing over the heated pipes. In the houses here, there are three ventilators on each side to each house in the brickwork opposite the pipes. The ventilating shutters are made of wood, about two feet long, and one foot wide; sliding slate ventilators answer perhaps better. There should be one glass ventilator at the south end, near the roof, and one at the north end. We have also four small ventilators near the ridge of the roof, two on each side, on hinges, opening from the inside with cords; they are intended to let out the top-heat, the egress of which we have found very essential to the well-being of the plants.

There are several contrivances for working the ventilators, the most popular being by means of iron rods and levers running from end to end of the house, so that all the ventilators may be opened at once. There are also many other appliances, but great care is required in using them, so that in cold windy weather too much air may not be given, as by all the ventilators opening at once air is given simultaneously all over the house, whereas it may only be expedient to give it at one end. No rule can be laid down for ventilation, as so much depends upon the locality where the plants are grown, and the period of growth at which the plants have arrived, as well as on the temperature of the house, but at all times there should be a free circulation of air, for these plants do not naturally live half their lives in a vitiated atmosphere, but of course the amount to be given will have to be regulated by the state of the outside temperature.

SHADING OF ORCHID HOUSES.

EVERY Orchid house requires to be shaded, although we are often told the practice is wrong; but as some plants would soon be destroyed if the burning rays of the sun were allowed to shine upon them when grown under glass, the use of blinds in summer is quite necessary to successful cultivation. It is possible, however, to carry shading to excess, and all such excesses must be studiously avoided. The best shading material is a thin canvas or netting. There should be blinds on each side, with a strong lath at the top to nail the canvas to, and a roller at the bottom. The canvas must be nailed to the roller, but care should be taken in doing this that the awning will roll up regularly from bottom to top. We never allow the canvas to be down except when the sun is powerful, for we find that too much shade is injurious to most kinds of Orchids. The awning will also be useful in the winter season for covering the house during a frosty night, being a great protection to those plants that are near the glass. It is advisable to have a cap or covering or coping on the ridge of the house for the protection of the canvas when rolled up, in order to keep it from wet.

The following remarks on this subject have appeared in the *Orchid Album* as a note under Plate 30, and it may be useful to our readers to reproduce them here :—

“This is a subject of the greatest importance in Orchid culture, and one that is often overlooked until it is too late, the mischief being done. What is required is a strong durable material that will wear well, and where rollers are used, stand the strain upon them. It must also be understood that shading does not consist of merely daubing upon the glass some opaque material, such as paint, summer cloud, whitening, or the like, which though all very well as palliatives in positions where rollers cannot be used, such as at the ends and sides of a house, are greatly to be deprecated as a shading for the roof; for this reason, that in our English climate we are so subject to sudden changes of the weather, that were such a permanent shading to be used, we should frequently, especially during dull weather, have our plants in comparative darkness when they should be getting all the light possible. This cannot fail to lead to bad results and to produce a sickly growth.

“Some growers have used thick canvas; indeed we have done so ourselves many years ago, but by experience we have found out the ill effects of it, for when we employed this kind of shading we found the plants under its influence became weak and sickly, producing small puny flower spikes. A lighter shading was then employed, and the difference was marvellous; the plants assumed quite a different aspect. It was at this time that we were exhibiting at Chiswick the fine specimens of East Indian Orchids—*Aërides*, *Saccolabium*,

Vandas, *Dendrobiums*, and many others—such as we seldom see equalled now. Since then we have used thinner shadings, with the best results. Our *Vandas* thus treated have always been strong and healthy, with broader foliage, producing their flower-spikes as often as three times a year, with the flowers of a good colour, lasting a long time in perfection; in fact we are never without flowers, always having a good display. We refer more particularly to the *suavis* and *tricolor* section of the genus. Some people imagine *Vandas* do not flower till they attain a large size, but such is not the case if they are properly grown and thin shading is used.

“Our experience leads us to the belief that all Orchids, with a few exceptions, require a thin shading, that is to say, one that, while warding off the direct rays of the sun, will allow the light to enter through it. To arrive at this result we now use a strong durable cotton netting, woven in small squares, close enough to exclude the rays of the sun while the light penetrates it with but little interruption. This netting stands exposure to the weather much longer than canvas, and on that account is cheaper in the long run. We have used this material for some years in the case of cool Orchids, Mexican and East Indian kinds, with the best results, the netting being attached to rollers with appropriate gear. For the cool Orchid houses we employ Raised Blinds. In the winter we take them off the house and put them in a place of safety until they are required again in the ensuing spring.”

The Raised Blinds just referred to formed the subject of a subsequent note under Plate 35 of the same work, which note is here transcribed:—

“During the summer months we have found Raised Blinds very beneficial to the growth of Orchids, especially to those requiring cool-house culture. When the hot summer's sun is shining upon the glass, it is very difficult, where Raised Blinds are not employed, to keep the temperature sufficiently low. The glass roof of the structure upon which the sun is shining becomes very hot, even when shaded with ordinary blinds; but if Raised Blinds are used a current of air is allowed to pass over the entire surface of the roof, and the glass is kept comparatively cool. The effect of this is to decrease very appreciably the internal temperature of the house; and the moisture, which would otherwise be dried up by the burning heat of the sun, produces a nice humid genial atmosphere in which Orchids delight.

“We will now explain briefly the mode of construction. Supposing that the house to be furnished with Raised Blinds is an ordinary span-roof structure, it is necessary in the first place to provide a second ridge elevated about six inches above the top of the existing one. This should not consist of a solid plank, but of a strip of timber sufficiently strong to bear the weight and strain of the blinds and roller; and should be supported on blocks of wood placed at intervals in order to allow the current of air from below to find an outlet, which would not be the case if a solid ridge-board were adopted. Having arranged for the ridge, the next thing is to provide supports for the rollers. Either wood or iron may be used for this purpose, but we have found iron to be the lightest looking and the most durable. Where the length of the rafters does not exceed say eight feet, half-inch rod iron will be found to be strong enough, and this should be cut into proper lengths with the lower end turned up in a semi-circular form so as to catch the roller when it descends, and

prevent it from running off the supports. These supporting rods should be fixed to the bars or rafters of the house about six inches above the woodwork, by being welded to vertical iron stays, which latter should be flattened out at the base, and provided with holes so that they can be screwed to the rafters or bars of the roof.

"In this way a strong support for the blinds to roll upon will be formed; the blinds themselves can be attached to the elevated ridge in the ordinary way, and the gearing usually employed for the purpose will be found to answer well for pulling them up and down. Many Orchid growers have already adopted the Raised Blinds with very beneficial results."

GROWING SPECIMEN ORCHIDS FOR EXHIBITION.

GREAT progress has been made in Orchid culture within the last forty years, owing perhaps to what has been written on the subject. There were, however, in years gone by, many fine collections of Orchids around London; some in France, and a few in Belgium, Germany, &c. The grand specimens that were exhibited at our London shows were very fine, especially the East Indian kinds, which were far in advance of those of the present time, and also more numerous, indeed, the fostering care bestowed upon the distichous-leaved East Indian Orchids would seem to have almost completely died out since the advent of so many cool-house species from the Western Hemisphere, but still there is nothing to equal the fine display of the genera *Saccolabium*, *Aërides*, *Vandas*, and *Angraecums* of the earlier days. The single specimens were very fine indeed, and great interest was excited, and no little pride was felt among amateurs to produce those which were exhibited for many years at the Chiswick and Regent's Park shows. Within the past few years the taste seems to have in some measure revived, although many of those now exhibited are *made up*, instead of being genuine specimens. Of course there are some Orchids which will not make an exhibition specimen unless masses of them are put together, and this grouping or massing of such plants being allowed at the shows, nearly every one adopts the practice. While it is permitted, of course the making up instead of growing specimens will be continued, and that without any fault of the exhibitors. Some exhibitors, however, put their plants together to form these quasi specimens in a very clumsy way, instead of displaying taste and judgment in their selection and arrangement.

In all such cases varieties of the same colour should be placed together in the one group; this may be found difficult, but unless the colours match the mass should not be considered as of one variety, although it may be of the same species. The difficulty may be avoided by putting the plants together during the preceding season when they are in blossom, and then growing them on together. This is a far preferable plan to that of disturbing them a few days before a show, which often injures them and prevents them from flowering the following year, which is a great loss to the exhibitor, especially when he desires to make every plant tell.

There is no doubt a great deal may be accomplished in the way of securing a good display by giving attention to bringing the plants into bloom at the right time, without forcing them too much. It is far better to allow the plants to open their flowers gradually, and at the proper time, for they are then of more substance, of a better and richer colour, and last in flower much longer, besides which the plants are more easily carried to the shows, requiring, however, no less care in packing the blossoms so that they do not get bruised. See instructions given for packing Orchids for conveyance to the exhibitions, at p. 58. An experienced grower should be able to tell to a few days when a particular plant will be in flower, and how long it will last in beauty. This knowledge may be obtained by taking notes year by year and summing up the average results. This is what we did when we commenced Orchid culture. If this matter be made a study, and it can be easily done with persevering observation, it will be found that a much smaller number of specimens is necessary than will otherwise be required in order to ensure a display.

One chief point is often lost sight of, and that is giving attention to the plants at the proper time. A plant, like other things, if it does not get proper attention at, or as nearly as possible to, the right time, will not yield a satisfactory result—neither can it be expected. If plants under glass are not potted or planted, and if seeds in the garden are not sown at the time they should be, they cannot be expected to do well, or to come in at the required time. We state these facts for the benefit of the cultivator.

Plants, after being flowered and exhibited, will be found to have exhausted much of their vigour, and consequently after that period they

require a good deal of attention. Some must be started into growth, others require rest and to remain dormant for a time before being again stimulated into growth. Those that make the start should have all the encouragement possible, in order to produce good, sound, healthy, vigorous growths for the following year. Success very much depends upon attention to this treatment, which is often overlooked by cultivators, and the next year's flowering is consequently often a failure. A few weeks lost in the growth of a plant cannot be made up. Our seasons are so short that there should be no time lost, especially as we get such a long autumn and winter, during which we have very little light and not much sun. The summer months ought to be made full use of in ripening the pseudobulbs, which will cause the growth to be vigorous and the flowering more successful; there will also be more leading bulbs and strong roots, which are the results of good cultivation.

Under this *régime* exhibition specimens—real specimens—will be produced, and the necessity for putting small ones together to form a mass will be avoided. To remove even these smaller plants disturbs their roots at a time when they require to be making progress in order to perfect their next season's growth, and is not therefore desirable. Plants when in vigorous health are less likely to be attacked by insects, which is an important item in their cultivation. We give full details on the mode of battling with insects in a chapter devoted to these pests.

TREATMENT PREPARATORY TO EXHIBITION.

THERE are many cultivators of Orchids who object to send their plants to a public exhibition solely because they are afraid that they will receive injury; but these fears are quite groundless if a moderate degree of care is exercised. We have been exhibitors of these plants for nearly forty years, and during that period have had very few plants injured by exposure at flower shows. That some valuable Orchids have been damaged at these places we know full well, but the fault has usually been in the want of due care in their preparation.

It is our practice to move the plants to a cool dry house or room for

a few days previous to the show. If the plants are growing in the hottest house, we move them to the cooler one. During this time they should be allowed only just enough water to keep them slightly moist. When it is probable that the plants will come into blossom earlier than is wished, the time of flowering may be successfully retarded by taking them to a cooler part of the house, or even putting them in a warm greenhouse, keeping them slightly shaded during the brightest part of the day.

Dendrobiums, if they are wanted to bloom later in the season, are very easily thus retarded. *Dendrobium nobile*, *D. superbum*, *D. densiflorum*, *D. Farmerii*, *D. Pierardii latifolium*, *D. Wardianum*, *D. crassinode*, *D. Schröderii*, and *D. Devonianum*, generally bloom during winter, but we have kept them back until June; and, by having a succession of plants, the Orchid house may be gay with *Dendrobiums* from January to June. Nearly all the *Dendrobiums* will bear cool treatment while at rest, and all can be kept for late flowering. To ensure this, place them in a warm greenhouse and give but little water—in fact, only just enough to keep them from shrivelling; under this treatment the temperature should not fall lower than 40°, and the stems must be kept dry, or the flower buds are apt to rot. They should be shaded from the sun so that the flower buds may not be excited. When the plants are wanted to flower they should be removed to the Orchid house, and still kept shaded from the sun. *Cælogynes*, *Odontoglossums*, *Masdevallias*, *Oncidiums*, *Phajus Wallichii*, *P. grandifolius*, *Lycaste Skinneri*, and many others may be kept back in the same way as the *Dendrobiums*. We have had ample proof of this by taking these plants to shows. Thus we exhibited sixty-five specimens in Brussels, and not a plant was injured; again, at Philadelphia, Amsterdam, Cologne, Oporto, and Dresden, we exhibited with the same good results. Our plants were taken more safely than those of exhibitors that lived but a few miles off, the reason being that proper care was taken to pack them well and to give no water—in fact, we followed the rules here laid down.

PACKING ORCHIDS FOR EXHIBITIONS.

IN transporting Orchidaceous plants to exhibitions they require great care in packing and tying, for many of them are very tender. Their flowers in many instances are large and waxy, and some of them require more packing than others. It is extremely annoying to have a fine specimen plant spoiled, during its journey to the place of exhibition, in consequence of its not being carefully packed, when with a little more care it would have travelled safely to any distance. In fact, distance is of very little consequence if the packing is well done. This was proved in a most extraordinary manner in the spring of 1869, by Mr. R. Warner, who sent upwards of fifty specimen Orchids, from his gardens at Broomfield, to the International Horticultural Exhibition at St. Petersburg. These plants were carefully packed in close cases, and sent by rail the whole journey, saving the short run across the Channel by steamer, eight days being occupied in the transport. When unpacked and staged, they were in excellent condition, having suffered during the journey no more than they would have done in the houses at home. That these plants should have travelled to St. Petersburg in such excellent condition is undoubtedly the greatest feat in connection with horticultural exhibitions that has ever been accomplished, especially considering that they were all large plants—amongst them *Phalanopsis Schilleriana*, with a hundred expanded blossoms; *P. grandiflora*, with about half the number; *Vandas*, with numerous spikes; *Trichopilia crispa*, with a hundred open flowers; *Cattleyas*, *Dendrobiums*, *Odontoglossums*, *Cypripediums*, *Aërides*, and several other genera, the whole being profusely bloomed. A remarkable proof of what care will do with even the most delicate flowers was given in the case of the plant of *Odontoglossum Alexandræ* exhibited in this collection, which, after standing at the St. Petersburg Exhibition for a fortnight, was again packed up and exhibited three weeks later at the Royal Horticultural Society's Gardens at Kensington, with the loss of only one or two flowers.

We have had a good deal of this work to do, and a few hints on the subject to beginners may be of practical use. Some kinds bear carrying much better than others. *Phajus Wallichii* and *P. grandifolius* are both bad plants for travelling if not well packed. We have seen fine plants brought to different flower shows with their flowers completely spoiled, for

want of proper packing. On the other hand we have shown *P. Wallichii* for several years at the Chiswick and Regent's Park Exhibitions, and always managed to convey it without any injury. Oiled tissue paper is an excellent thing to wrap each flower in, also the flowers of *Vandas*, and indeed any that are particularly liable to bruise through the transit. In preparing them we put a strong stick to each flower spike, the sticks being long enough to go firmly into the pot. They should be placed at the back part of the flowers, and should stand one or two inches above the flower spike; some wadding should then be fastened round the stick, with the smooth or glazed side towards the flowers so that it does not cling or leave any portion upon the flowers, and the flower spike tied firmly to it, putting more wadding or fine paper round every flower stalk, and tying each firmly to the flower spike. Begin at the top of the spike, and tie every flower separately, so that they do not touch one another. The leaves must not be allowed to rub against the flowers. On arriving at the end of their journey, untie them, remove the wadding, and tie them out in the proper form. In tying, care should be taken not to rub the flowers.

Saccolabium and *Aërides* do not require so much packing. It is sufficient to put two or three sticks to each spike—one at each end and one in the centre if the spike be long, or two only if it be short. The stick, which should only be long enough to support the spikes in the drooping way in which they grow, should be firmly fixed in the basket or pot; a small piece of wadding or fine paper should be placed on the top of the stick, and to this the spike should be firmly tied. This will be sufficient to ensure safety. The wadding should not be allowed to touch the top part of the flowers, as it will stick to them and be very difficult to remove.

Vandas require more packing, their flowers being larger and further apart; place some wadding between each flower on the spike, then fix some sticks firmly in the basket or pot, and tie the spike to them, without allowing the stick to touch the flowers; wadding should then be put in between the flowers to keep them separate, and a piece of oiled tissue paper over all the flowers, the smooth surface being placed on the blossoms.

Phalenopsis grandiflora and *P. amabilis* travel badly, and require much care. The best way is to set the plant in the bottom of a box,

which must be long enough to allow the flower spike to lie at full length ; wadding should then be placed underneath the flowers, which should lie flat on the wadding ; another sheet of wadding should then be placed on the top of the flowers, in order to make them lie firmly, although they may be treated in the same way as recommended for *Vandas*.

Dendrobiums in some cases only require a stick to each stem, fixed firmly in the pot, and to this they should be tied. This plan will serve for such as *D. nobile*, *D. superbum*, *D. Devonianum*, *D. Linarianum*, and sorts with similar flowers. Those, however, that flower with pendulous racemes, such as *D. densiflorum*, *D. Farmerii*, *D. thyrsiflorum*, *D. suavisissimum*, and others growing in the same way, require three sticks—one to the stem, to which the latter should be firmly tied, and the other two to the flower spike, one at each end, in the same way as with the *Saccolabiums*.

Calanthes are bad travellers, especially *C. veratrifolia* ; the delicate white flowers soon become injured and discoloured if allowed to rub against each other. To avoid this, put a stick carefully to each spike.

Cattleyas require to be packed very carefully ; their flowers should be tied so that they do not touch one another. The best method is to put a stick to each flowering bulb, tying it firmly, and a stick to each flower stalk, just below the flower, with a piece of wadding round the stalk ; afterwards tie the stalks to the stick ; neither the sticks nor the leaves should be allowed to touch the flowers, or they will become bruised.

Oncidiums travel well ; they only require a strong stick to each flower spike, with a piece of wadding round the stick at the points where the ties come.

Sobralia macrantha is a bad plant to travel if not properly tied. There should be a strong stick placed to each flowering growth, which must be tied firmly ; and also one to the flower stalk, with a piece of wadding close to the flower ; then tie the stalk firmly to the stick, and allow nothing to rub against the flowers.

Peristeria elata should be treated in the same way as above recommended for *Phajus*.

Cypripediums which have separate flowers require a small stick to each flower stalk. The *Lycastes*, and all other Orchids that flower in the same way, require similar support for their individual flowers, which, if kept separate, will travel safely without more trouble.

All Orchids if going a long distance should have fine paper placed over the flowers, as the dust often spoils the delicate bloom ; this also protects them from cold.

The best means of conveyance for Orchids is decidedly a spring van with a cover on the top. In placing the plants in the van, we always put some hay between the pots, to keep them firm and prevent their rubbing against each other ; this, moreover, helps to retain the warmth in the pots by preventing draughts from reaching them, and thus the roots are not subjected to any great check through change of temperature.

An opportunity occurs here to remark upon the paucity of Orchids at our great London exhibitions of the present day, as compared with those of former years. It is true several of the large contributors are dead, and their collections are dispersed ; some few have relinquished their culture, and others have removed to a distance ; but there still remains ample material in the numerous rich collections in the vicinity of the metropolis to again furnish a glorious bank of flowers, such as formerly greeted the eye at the Chiswick and Regent's Park Gardens on Exhibition days ; and we are fully persuaded it is only from the want of encouragement in the matter of prizes that we do not now see these gorgeous displays at our London shows. That such is the case, we have only to turn for proof to the great Whit-week show at Manchester. There the prizes are good, and not only do the cultivators in the immediate vicinity bring their plants, but others from a considerable distance can be seen staging their productions for competition against the celebrated growers of "Cottonopolis" ; indeed, the display of specimen Orchids made in 1870 we never saw surpassed, if equalled, at any show. This may be readily imagined when it is stated that a double row of these plants alone extended a distance of over three hundred feet, and amongst them were many of the grandest *Lælias*, *Cattleyas*, *Vandas*, *Trichopilias*, *Odontoglossums*, and a host of others, we have ever beheld. Some may contend from these facts that the love of gain is the chief motive power. This would be a wrong conclusion to draw ; but, although gentlemen and gardeners do sometimes exhibit for the honour only, such cannot always be the case. Indeed, the cost of obtaining a proper conveyance, the packing, the transit, and the time occupied at the exhibitions, represents a considerable sum of money, and very few persons can be induced to

incur the expenditure if the prize to be competed for does not at least cover the expense—neither is it reasonable of any Society to expect that they should do so.

INSECTS AND OTHER ENEMIES.

ORCHIDS have always been liable to be injured by many sorts of Insects, such as Red Spider, Thrips, Mealy Bug, White and Brown Scale, Cockroaches, and Ants; and also by Woodlice, *Helix alliaria* (a small kind of Snail), and a few closely allied species, and slugs; but they have some friends of the animal kingdom, and amongst them we would mention GREEN FROGS. We have found Green Frogs very useful in Orchid houses, and we believe many growers now employ them. They are very agile in their movements, and it is surprising to see the rapidity with which they move from plant to plant without causing the slightest injury. The quantity of insects they eat is astonishing, especially young Cockroaches and Woodlice, which are generally plentiful wherever Orchids are grown.

The Insects injurious to Orchids are, unfortunately, becoming more numerous than they formerly were. Then we had only those already mentioned to contend with. Now, however, we hear of new Insects, coming in with new Orchids. This is not at all surprising, as Orchids are being brought home from fresh localities, and naturally bring the different species of Insects infesting them along with them, and these are introduced with the imported plants amongst which they harbour. Some of them prove to be terrible pests, feeding upon such of the plants as suit their taste. They should therefore be well looked after, and if possible destroyed before the plants are allowed to enter our houses. We cannot be too particular in this, for in it lies one of the chief elements of success: if these pests are not got rid of, they will in time destroy the foliage, besides giving a most unsightly appearance to the plant, which is very objectionable; the flowers, moreover, will be destroyed by these marauders, which is most annoying after all the care and expense bestowed upon them. A striking instance we saw a short time since, in several collections where *Dendrobium Phalaenopsis* was grown in considerable numbers; a small Beetle which feeds upon the interior of the

stem-like bulbs had been imported with it from New Guinea, and it made sad mischief, for it was found that to extirpate this pest the only plan was to cut off the infested stems and burn them.

There is no doubt that in this matter prevention is better than cure. Therefore these enemies must be kept in check by careful examination of the plants when they reach this country; for this purpose, before admitting them in our Orchid houses they should be placed in a probationary structure, and, should insects be found on them, one should not rest until they are entirely got rid of. We repeat what we have often said on previous occasions: well wash every part of the plant, leaves, bulbs, and roots, and then there will be little chance of the insects escaping destruction.

Imported plants are not by any means the only ones that suffer from insect pests. We frequently see plants exposed for sale in a disgracefully foul condition; in fact, they look as though water and sponge had never been near them. These Orchids require quite as much looking after as the imported ones, and the best plan of procedure is to thoroughly cleanse the bulbs and foliage, shake them out of the pots, cut away all the decayed roots, wash the sound roots in clean water, and then pot them in clean pots and in new material, according to the directions given for performing this operation. This, if efficiently done, will be a sure means of eradicating the pests, which the inexperienced grower will have to search closely for in order to find. Some of them are to be seen in the shape of eggs; others appear as young insects, but so minute that a magnifying glass should be employed in searching the foliage to discover them. If, however, the plan recommended above be followed, all traces of them will be cleared away. We find in the case of plants, as well as animals, that cleanliness is one of the first steps towards securing good health. We have now, we trust, shown what to do and what to avoid, in the case of imported plants and established specimens affected by these pests.

COCKROACHES are among the greatest plagues with which we have to contend; they will do a great deal of mischief in a few nights if not intercepted, and they should therefore be sought after at every opportunity. The food they like best is the young tender roots and flower stems, and we have known the roots of a plant completely eaten off in one night by these depredators. The only way to keep these insects under is

by constantly looking after them, both by night and day, searching for them in the evening by candle-light, and in the day-time by moving the pots and baskets under which they harbour. They leave their hiding-places in the evening, to seek after food, and it is then that they are most easily caught. Chase's Beetle Poison, a phosphoric mixture sold in boxes, is a capital thing to destroy them, if laid in different parts of the house in the evening, say, two or three nights a week, and then removed for a week, repeating the operation every other week until they are destroyed. It should be placed on oyster-shells or pieces of tile or slate, these being collected every morning and put down again in the evening. There are also several other kinds of Beetle powders, which should be placed upon the stages amongst the plants.

By using these preparations from time to time they may be kept under. It is also a good plan to lay some damp moss as a decoy in the hottest part of the house; this should be looked over every two or three days. We have killed many in this way. They may also be destroyed by the use of a mixture of honey, lard, and arsenic, the latter in very small quantity, placing some of this on oyster shells, and laying them in different parts of the house. Some growers mix the arsenic with tallow and put it on a stick, which is stuck in the pots; care must, however, be taken that the mixture does not touch the leaves or bulbs of the plants. Bell-glasses are also used for catching these pests, inverting them so that they are level with the soil or moss, and then half filling them with treacle made a little thinner by admixture with water; it should be thick enough to stick and prevent them from climbing up the glass; the dead ones should be removed every day.

Small ANTS are another pest in the Orchid house, as they carry the dirt to the flowers and thus spoil their appearance; as well as smother the plants, and, if allowed to accumulate, they frequently cause great injury to them. The best plan we know for catching these troublesome little insects is to cut apples in halves, scoop out a portion of the inside, and lay the pieces in different parts of the house, looking them over very often. We have in this way destroyed hundreds in a very short time. Treacle is also a good thing as a trap for these pests: place some in a bell-glass in the places which they frequent—they are fond of anything sweet; they go to feed, get into the mixture, and cannot get out again.

as it holds them down and thus causes their death. We have also found hollow bones a very good means of enticing them, but these should be dipped in boiling water and the bones laid down again, or the water may be poured on the bones as they lay on the stages. They should be frequently looked over.

The best way of getting rid of the RED SPIDER and the THRIPS is by frequently washing the leaves with clean water, steaming with tobacco juice, or fumigating the house with tobacco or tobacco paper. We prefer steaming to fumigating, this process being the least injurious to Orchids. We have tried it for some years with the greatest success, having used it in houses where the tenderest Ferns and flowering Orchids were grown. This operation is carried out by using specially prepared tobacco juice in an apparatus called the "Thanatophore." This contrivance was invented by M. Martre, of Paris, and we have taken up the sole agency for the sale of this new invention in this country. For further particulars as to the use of this apparatus we must refer our readers to the advertisements at the end of this book. Our method is to fill the house either with steam or tobacco smoke—in the case of steam twice, and tobacco smoke three or four times—at intervals of two or three days, till the insects are quite destroyed; the evening is the best time to do this. It is also a good plan to mix some lime and sulphur together, and rub it on the pipes in different parts of the house, taking care not to use too much; and it should be used only when the pipes are warm, not hot; there should be a good supply of moisture at the same time, but not too much heat. There is also a kind of Red Thrips which sometimes gets into the heart of the plants, and is very troublesome; steaming is the best remedy for this. It is very difficult to perceive, but will soon disfigure the tops of the plants if not kept under. When discovered, the house should be smoked every two or three nights till it is destroyed. The parts on which the insects had established themselves should be washed with tobacco water. Tobacco powder may also be used on the leaves, or even powdered sulphur mixed with water and applied to the affected parts with a camel's hair pencil.

The GREEN FLY or APHIS, which makes its appearance in spring on the young flower buds, may also be destroyed by steaming; and of late we have had a yellow Aphis introduced, which is a great pest if not kept under, and requires more looking after than the green fly; steam

will kill this pest, and wherever it is seen it must be washed off with a sponge to prevent its increase.

The BROWN SCALE, the WHITE SCALE, and the MEALY-BUG may be kept under by frequently sponging the leaves and bulbs with water. The White Scale is very troublesome if not looked after. A little soft soap mixed with water, and rubbed over the leaves and bulbs, is a good thing to destroy this kind of scale; it should remain on for a day, and then be washed off, when all the insects will be destroyed. Care should, however, be taken not to use it too strong. *Cattleyas* are very subject to this pest. The following is another recipe for destroying it: To one gallon of rain water add eight ounces of soft soap, one ounce of tobacco, and three table-spoonfuls of spirits of turpentine; stir well together, and leave the mixture for forty-eight hours; then strain it through a cloth, when it will be ready for use. It is necessary to rub the plants over two or three times if they are much infested, but once will be sufficient in most cases. Any portion of the mixture remaining after the plants are washed should be put into a bottle, and reserved for future use. This recipe is also a cure for Thrips on azaleas or other plants. The ingredients as above noted should be mixed in a large tub, and the plants dipped in it; this will speedily clear them of the pest. It will be seen, therefore, that it is useful to others as well as Orchid growers, and will prove a great saving of labour for those who grow large plants for exhibition, or for those who have a quantity of small plants to clear of such pests.

The MEALY-BUG must be kept away by constantly watching for it and frequently cleansing the plants. Whenever a plant is purchased that is infested with it, take care to cleanse it thoroughly before placing it in the stove or Orchid house. In a word, never allow insects to get the upper hand, or you will not long continue to grow plants to perfection, for all such pests are as poison to plants—robbing them of their vigour, and when they have lost that there is not much hope of them. There are more plants lost through uncleanness than from any other cause.

CATTLEYA FLY. One of the new insects we have now to battle with is a kind of fly which attacks the *Laelias* and *Cattleyas*. A maggot appears at the base of the young growths, and may easily be perceived by those who have once had their attention directed towards it, for the

bulb swells and becomes club-shaped at the part where the maggot is feeding; these larvæ when they are matured change into a fly, the swollen part of the bulb opens, and the flies are liberated and become distributed about the house, when, if they are not destroyed, they multiply and soon infest the healthy plants. They appear to live chiefly amongst the *Cattleyas*. They remain in the bulb until it is half-grown, which must, of course, injure the plant, and then they leave it.

The remedy to be adopted is this: as soon as the bulb is perceived to be swelling more than is natural to it, proceed to cut the growth away close to the old bulb, and thus destroy it at once before any mischief has been done. There is then a chance of getting another growth without it. This will be found to be the only effectual method of exterminating this enemy. It is annoying to have to cut away the young growth, but it is better to do so than to get other plants infested in the same manner. In the case of imported plants the insects will not be in the bulb, but distributed among the old stems, and if not destroyed at once they will be ready to enter the new shoots while young and tender. When the fly is full grown it pierces the foliage and young growths with its ovipositor, and lays its eggs, which soon change into maggots, these latter feeding on the growing bulbs and deriving their sustenance from the living tissues of the bulb, which is, of course, most injurious; these maggots in due time become flies. If imported plants have been infested there will be found a puncture near the bottom of the old bulb. If there is no puncture to be seen, the plant may be cleaned and put away. A successful Orchid grower told us how he had entirely got rid of these insects by the following treatment: He placed his newly imported plants in a house by themselves until the young growths were sufficiently formed to show whether or not there was any appearance of the swelling of the bulb; if not he felt safe, and removed them to their permanent quarters. This probationary treatment is a wise plan to adopt.

LARGE BLACK THRIPS. There is another new pest which has only come under our notice during the past year—that is a black Thrips, much larger than the one we have been in the habit of seeing. We have noticed it in several collections of East Indian Orchids, and it must have been imported among some of the *Aërides* or *Vandas*. This pest finds its way to the hearts of the plants, and causes the top leaves to become spotted or yellow; it must be closely and constantly watched

for, the hearts of the plants especially being well searched ; and if any of them should appear their destruction must be set about at once, no rest being given until they are banished from their haunts. For the purpose of destroying them use carefully a fine hair brush wetted with tobacco water so that the young leaves may not be bruised ; then take all the material out of the pot and burn it, wash the roots, and supply fresh moss, as they might accumulate among the roots. It is best to remove the infested plants to another house until the pest has been entirely subdued. When they are thoroughly cleared of the Thrips, take the plants back to the house, but keep a close watch upon them.

STOCK-SEED SCALE. There is also a scale insect which has made its way into our collections during the last few years ; it is known to Orchidists as the Stock-seed Scale, and is so named from its close resemblance to the seed of the stock. This generally gets under the leaves and flower spikes, and must be washed off the plants. Some persons think they are harmless ; but they do harm, because they must exist upon something, and that something must be the juices of the plant. They increase rapidly, and go from plant to plant. Where these are found there are always plenty of small ants, so that there must be something for these pests to live upon, or they would not be followed by those busy insects that are always searching for food. If the Scale is not destroyed, it will in time infest the whole house of plants. Ants appear to be very fond of this insect, and will travel a long way after it, carrying the dust from the potting material with them and disfiguring the plant. The practice of cleanliness by Orchid growers will be found the right road to secure success in the cultivation of their plants.

The **WOODLOUSE** and small **SNAILS** and **SLUGS** of whatever species are also very destructive. These, like the cockroach, are all very fond of the young roots. They may be trapped by cutting some potatoes, scooping out the inside, and placing them on the pots and baskets, looking them over every night and morning till the house is cleared of the vermin. Turnips cut in slices will answer the same end. Small flower-pots, with some dry moss at the bottom, also form capital traps for the Woodlouse ; lay them on their sides in different parts of the house, and examine them frequently, destroying those that are caught. Toads and Green Frogs are very useful in catching these pests, and a few placed in a house prove very serviceable.

DISEASES OF ORCHIDS.

ORCHIDS are subject to diseases in their leaves, stems, and pseudobulbs, especially during the damp months of winter. Of these the most injurious are the Rot and the Spot.

The ROT, which is apt to assail the thick fleshy bulbs, is caused by too much moisture in the house, in many instances by water from the syringe gathering in the sheaths surrounding the stems, and there being a great want of circulation in the air. When the heat is low, the drip from the glass will sometimes fall on the crowns of the pseudobulbs, and this soon causes them to rot. Steam is also very injurious in a house during the winter; it is particularly inimical to such plants as *Cattleyas*, *Laelias*, *Odontoglossums*, and other Orchids that have fleshy bulbs.

When the leaves begin to rot, the diseased part should be cut clean away, and a little sulphur rubbed on the part that is cut, but not so that the sulphur can get to the roots.

When the rot attacks the bulbs it should be seen to at once, as it may easily be stopped by cutting the diseased part entirely away with a sharp knife, no portion of the diseased or decayed bulb being left, and the wound should then be filled up with sulphur, to keep it dry. Should any part of the fleshy pseudobulbs of the above named plants, or of those with similarly-formed bulbs, become discoloured, and the dark or discoloured part appear moist or wet, especially if any fluid exudes from it on pressure, the wet or discoloured part should be immediately cut out, or there is danger that the bulb may be destroyed, as the rot is often much more extensive within than the discoloured appearances on the outside would seem to indicate. The plant should also be removed to a drier and cooler place, and water should be given with the utmost care.

The SPOT is the dread of Orchid growers, and there is no denying that when it attacks a plant it will soon disfigure it. Some assert that it is infectious, but this we do not believe. Indeed, we should have no hesitation in placing a plant infected with spot amongst a quantity of healthy ones, and, should any of these become diseased, we should feel certain it was induced by a wrong course of treatment in some respect, and that no blame could be laid to the charge of the neighbouring plant. A great deal has been said and written respecting this disease, which we

have seen in various places, and on other plants as well as on Orchids. We have not experienced much of it ourselves, and have in most cases found that the plants outgrew it.

To prevent the disease making its appearance, no rotten or rotting material should be permitted near the roots, either in the shape of sour stagnant moss or soil, or decomposed wood. If the plants get sufficient but not excessive heat, an abundance of fresh sweet air without draughts or sudden chills, a liberal supply of moisture, and full exposure to the light, with shade from the direct burning rays of the sun, we are fully persuaded that the Spot will never be troublesome. On the other hand, if any plants are attacked, the material about the roots should be taken away, every particle of decayed or decaying root removed, and the sound portions should be well washed with warm water; after this they should be re-potted in some good sweet soil, the instructions already given for the treatment of healthy plants being otherwise followed out.

In 1860 a gentleman bought of us some plants of *Phalaenopsis*, which were the finest grown plants we had seen, and they did beautifully with him for some time, growing very fast—in fact too fast, for they got sappy, and their leaves became spotted, as did also those of some others he had. Some time after we went to see them, and our opinion respecting them was asked. Upon inquiring how they had been treated, we were told that a great deal of water had been given over the leaves, and the roots kept wet; this was during winter. We called to see them several times during the following spring, and advised that they should be treated as recommended for *Phalaenopsis* in these pages. These plants have quite outgrown the Spot, and are now among the finest round London.

When at Hoddesdon, we had two *Phalaenopses* which became affected with Spot in the winter. We cut off one of the leaves, and sent it to Dr. Lindley for his opinion as to the cause of the evil. His reply was, that the plants had been kept too moist during the cold dark days of winter—a reply which we have never since lost sight of. He was quite right, for it was a sharp winter, and these two plants had been kept wet by placing the bottom of the block on which they grew in a pan of water to keep off the cockroaches. In that way, too, much moisture crept up to the roots, and, being in the winter time, this doubtless caused the leaves to become Spotted. However, by following the treatment here recommended in the remarks on *Phalaenopsis*, the plants soon recovered;

but if a rigorous change had not been adopted in time, the disease would have gone too far, and probably killed the plants.

Much injury is done to epiphytal Orchids by keeping the plants too wet at the roots in dull weather ; in fact, too much moisture in that way is injurious at any time, especially to those species that grow on branches of trees, when they come to be confined in pots and baskets. Our practice is to give but little water at the roots during winter, and not so much as many people in summer, because we have seen the ill effects of it. The treatment we recommended some years ago we still follow, and with uniform success.

Some Orchid growers give more heat and moisture than is here recommended, and their plants have done well for a time ; but under such exciting management they are apt to become Spotted, and get permanently into a bad state of health—in short, the least chill, after growing in so high a temperature, is liable to induce disease. The great secret in the cultivation of these as well as of all other plants is to provide a proper house, without drip ; to supply sufficient ventilation, heat, and moisture ; and to ensure the total banishment of insects detrimental to vegetable life. The temperature throughout the year should be kept in accordance with the directions laid down in these pages, which are the result of long experience and close observation.

PRICES OF ORCHIDS.

THE value of these plants has fluctuated considerably from time to time, according to the supply and to other circumstances. Sometimes the rise and fall of the markets cause their prices to vary ; at others the removal to a distant part of the country, to a residence unprovided with the necessary house room for the reception of the plants, and their owner, thinking the risk and trouble of their transit for a long distance is more than he can undertake, brings them before the public in the sale rooms of the metropolis or other large towns, or they are publicly sold on the premises where they had been grown. Again, the decease of the owner of a large collection of Orchids frequently causes them to be brought to the hammer, the executors finding this the most ready way of securing a settlement of the estate, and this throws a

vast quantity of plants upon the market at various prices, by which, in some instances, a good margin of profit is realised, and at others a loss has to be credited to some of the plants. But, taking it on the whole, we think the purchase of good Orchids and growing them well is a very good way of spending one's spare cash, and in many instances, independent of the large amount of pleasure and happiness one derives from them, proves a good pecuniary investment. Still, the prices of Orchids vary considerably. Many plants that were high priced some thirty or forty years ago are now very much reduced in value, and, for the matter of price, some of those plants which brought a very long price, say, only ten years back, are very low in price at the present time: and this gives to many an opportunity to indulge in their taste for Orchids at a moderate expenditure, rendering our early statement of "Orchids for the Million" more applicable than ever it was. The highest prices now obtained for Orchids is first, for those which have only been imported upon a very few occasions; for instance, we have *Aërides Schröderii*. The original plant of this was sold at Mr. Schröder's sale for £89, and it cannot be bought at the present time under some fifteen or twenty guineas, according to the size and strength of the plant. So with *Cypripedium Stonei platytaenium*, when it was sold at Mr. Day's sale, brought 140 guineas, these prices having been obtained for plants which had never been imported from their native country upon more than one occasion. Other plants may be named which have realised high prices upon their first introduction, and the case of the fine *Aërides Laurenciæ* which realised in the public auction rooms the highest price given for an Orchid, viz., 235 guineas; so *Coelogyne cristata hololeuca* (alba) brought £200, *Vanda Sanderiana* £180, *Cymbidium Parishii* £105, *Renanthera* (*Vanda*) *Lowii* 100 guineas, *Phalaenopsis intermedia Portei* and *Phalaenopsis amabilis* £100. But it is useless to multiply examples of high prices which particular plants have realised, as we have daily examples how cheaply plants of beautiful and showy species can be bought; it is the good varieties of these species which are always sought after, and which serve to realise long prices. Hence it is always well for an amateur to surround himself with varied and good forms, and these will always be in demand. As an example, we may mention *Odontoglossum Alexandrae*, which in the ordinary type we catalogue at 3s. 6d. and 5s. each in fair sized plants: varieties of this plant have realised as much as

160 guineas and 165 guineas, and there are many other species which have equally valuable varieties.

Hybrid Orchids, now becoming somewhat plentiful, also realise high prices, and this appears to us to be a far safer investment than paying very large sums for imported plants, because, in the latter case the market is liable to a large and sudden influx of plants, which at once brings the most beautiful species and varieties down. Take, for example, the rapid fall in price of *Cypripedium Spicerianum*, and more recently of *Cattleya labiata*, but with hybrid forms the case is different, for if other persons than the original raiser of a particularly good form have seedling plants derived from the same cross they will necessarily have to flower them before they can be offered as the same plant; and we know from experience the length of time required to bring many of the hybrids to this state. Moreover, as Orchids do not increase under cultivation with the rapidity that many plants do, the stock of any one plant remains limited for a considerable amount of time, but the prices of these, as with every other class of plants, is liable to great variations, brought about by the demand and supply.

SELECT ORCHIDS IN CULTIVATION.

WE next proceed to give a popular description of the best Orchidaceous plants now cultivated in our gardens. The distinctive features of each genus are first given, and these are followed by an account of the mode of treatment which we have found, after many years, to be best adapted to their successful cultivation, and supplemented by descriptions of the choicer species and varieties. The genera and species are arranged in alphabetical order for facility of reference.

ACANTHOPHIPPIUM, *Blume*.

(*Tribe Bletieae, subtribe Epidendreae*.)

This is a genus of Asiatic Orchids belonging to the *Epidendreae*. They are terrestrial plants, with oblong pseudobulbs, and strongly ribbed leaves. The scape is erect, and bears from three to seven somewhat large flowers, which are ventricose, and furnished with a blunt spur.

Culture.—As before remarked, they are terrestrial, and require to be well shaded; pot culture suits them best, but the pots must be well drained. The soil should consist of about equal parts of peat, turfy light loam, and leaf-mould; press the mould down firmly and do not elevate the plant above the pot. During the season of growth a liberal supply of water is necessary, both to the roots and in the atmosphere, but during winter it may be entirely withheld. They should be grown in the East Indian house.

A. BICOLOR, *Lindley*.—Pseudobulbs small, ovate, bearing leaves a foot or eighteen inches long, and which taper at both ends. Scape erect, bearing several campanulate flowers, usually from three to four in a cluster. Sepals and petals nearly equal, oblong-lanceolate, acute, yellow, streaked and spotted with reddish-purple; lip bluntly tongue-shaped in front, bearing on the disk three fleshy protuberances, lateral lobes incurved, obtuse. Flowers in May and June.—*Ceylon*.

FIG.—*Maudsl. Bot.*, iv, t. 200; *Bot. Reg.*, xx, t. 1730.

A. CURTISI, *Rehb. f.*—This is a species of recent introduction, which resembles the preceding in most details. The flowers are more or less dotted with purple and rose; lip yellowish, bearing fine raised lines of a yellowish hue between the white fringes.—*Malay Archipelago*.

A. JAVANICUM, *Blume*.—This species, although resembling the others in general habit, may be distinguished by its bluntly quadrangular pseudobulbs. The scape bears from three to six flowers, which are yellow, streaked and spotted with reddish-purple; petals somewhat spatulate; lip three-lobed, middle lobe slightly contracted, side lobes truncate. Flowers in spring.—*Java*.

FIG.—*Bot. Reg.*, xxxii, t. 47; *Bot. Mag.*, t. 4492; *Blum. Flora Java*, t. 49; *Lem. Jard. Fl.*, t. 35; *Moore, Ill. Orch. Pl.*, t. 1.

A. STRIATUM, *Lindley*.—A slender growing species. The flowers are white, sparingly streaked and flushed with red. Sepals and petals nearly equal, oblong, acute; the three-lobed lip is small and fleshy, bearing numerous warty protuberances on the disk and centre of the middle lobe, the side lobes oblong-obtuse. Flowers in spring.—*Nepaul*.

FIG.—*Bot. Reg.*, 1838, t. 68.

A. SYLHETENSE, *Lindley*.—This is also a white flowered species, but it is of a creamy hue, streaked and spotted with purple. Sepals and petals oblong-lanceolate, acute; lip three-lobed, anterior lobe fleshy in texture, tongue-shaped, the centre bearing three fringed protuberances, lateral lobes small. Spring months.—*Sylhet and Khasia*.

ACINETA, *Lindley*.

(Tribe Vandeeae, subtribe Stanhopieae.)

Epiphytal plants of stout habit, bearing showy flowers in drooping racemes from the base of the pseudobulbs. They are related to *Peristeria*, and distinguished by their broad and finally spreading sepals, and the narrowly margined claw of the lip, which has a concave inflexed middle lobe, by a longish column, and by the oblong stalks of the two pollen-masses becoming thickened with a gland at the base. About eight species are known, natives of Tropical America and Mexico.

Culture.—These plants should be grown in baskets or on blocks, as their flower spikes, which invariably take a downward direction, spring from the base of the pseudobulbs. They are all evergreen, with short pseudobulbs, and nervose leaves, about a foot high. They are of easy culture in a mixture of moss and peat; and a liberal supply of water at the roots is necessary during their period of growth, but during their resting season less will suffice. They will all succeed in either the East Indian or *Cattleya* house, suspended from the roof; and all of them may be propagated by separating the pseudobulbs when fully matured. In order that the flowers may be kept as long as possible from blemish or decay, care should be taken not to wet them while watering or syringing the plants; this precaution, indeed, applies to all Orchids, and to all other choice flowers.

A. BARKERI, *Lindley*.—A handsome species, with drooping spikes a foot long of large fleshy golden-yellow subglobose flowers, spotted with dark red in the centre of the lip; blooms during summer, and lasts long in perfection.—*Mexico*.

FIG.—*Bot. Mag.*, t. 4203; *Part. Mag.*, xiv. t. 145; *Ill. Hort.*, t. 44; *Batem Orch. Mex.*, t. 8.

SYN.—*Peristeria Barkeri*.

A. DENSA, *Lindley*.—A beautiful species, with long drooping spikes of large bright yellow flowers, which are larger and more expanded than in *A. Barkeri*; inside the petals are covered with crimson spots, and the lip which is boldly dotted with red on the side lobes has a large quadrangular appendage or gland of a deep sanguineous red; blooms in March and April, and lasts a long time in perfection.—*Central America*.

FIG.—*Floral Mag.*, t. 16; *Part. Fl. Gard.*, i. 91. fig. 63; *Bot. Mag.*, t. 7143.

SYN.—*Acineta Warscewiczii*; *A. erythroxantha*.

A. ERYTHROXANTHA.—See *ACINETA DENSA*.

A. HRUBYANA, *Rchb. f.*—This, according to Prof. Reichenbach, is a fine and distinct species, with loose racemes of ivory-white flowers, which bear a few purple spots on the lip, and are distinguished from those of other species by having narrow erect side lobes to the lip.—*New Grenada*.

**ACINETA HUMBERTII.**

A. HUMBERTII, *Lindley*.—A noble plant, with pendent spikes two feet long of deep chocolate purple flowers, which are spotted on the surface, and have the petals much smaller than the sepals and of a deep rosy red, while the column is whitish; flowers about March, and continues but a short time in perfection.—*Venezuela*.

FIG.—*Bot. Reg.*, 1843. t. 18; *H.B.K. Nov. Gen.*, i. t. 93; *Moore, Ill. Orch.*, *Acineta* 1; *Fl. des Serres*, x. t. 902; *Orchid Album*, vii. t. 297.

SYN.—*Acineta superba*;
Peristeria Humboldtii;
Anguloa superba.

A. HUMBERTII FULVA, *Hort.*—A handsome and distinct variety with tawny-yellow flowers spotted all over with dots of purplish brown, the lip of a brighter yellow spotted with deep purple.

FIG.—*Bot. Mag.*, t. 4156.

SYN.—*Peristeria Humboldtii fulva*.

A. HUMBERTII STRAMINEA, *Hort.*—An interesting variety with the flowers of a pale straw yellow, with very few spots.—*New Grenada*.

A. SUPERBA.—See *ACINETA HUMBERTII*.

A. WARSCEWICZII.—See *ACINETA DENSA*.

ACROPERA, *Lindley*.

(Tribe Vandeeae, subtribe Cyrtopollieae.)

A genus of epiphytal plants bearing long loose racemes of large and curiously-shaped flowers. They are so nearly related to *Gongora* as to be included in that genus by some of our highest authorities on Orchids, the chief differences consisting in the broader sepals, of which the dorsal is galeate; in the often biaristate tips of the petals, and in the articulated oscillating lip. The species are few in number, and are confined to Central America and Mexico.

Culture.—These plants are nearly related to *Gongora*, and, like those of that genus, comprise species that are both pretty and curious. The flowers of those here described are large, and produced in great profusion; they do not thrive under cool treatment, which suits some other species, but they thrive best in the *Cattleya* house, grown in baskets, with sphagnum moss and fibrous turfy peat.

A. ARMENIACA, *Lindley*.—A free growing and somewhat slender plant, attaining about a foot in height, with somewhat oval pseudobulbs, producing from their apex a pair of lanceolate light green leaves, and from the base a slender drooping lax raceme a foot or more in length, bearing from twelve to twenty rich apricot-coloured flowers on a greenish purple rachis; blooms freely through the summer months, and is a very desirable plant for a basket.—*Central America: Nicaragua*.

FIG.—*Bot. Mag.*, t. 5501; *Part. Fl. Gard.*, i. 94, fig. 66. *Bateman's 2nd Century*, t. 116.

SYN.—*Acropera cornuta*; *Gongora armeniaca*.

A. AURANTIACA, *Lindley*.—A beautiful evergreen species, of neat compact habit, one of the most distinct of its family as regards the colour of its flowers, which last for a long time in beauty; it grows about a foot high, producing erect scapes with nodding spikes of bright vermilion-orange flowers, which are somewhat distantly disposed, and are peculiar for their closed form; it blooms in autumn and the early spring, and is of a very durable character.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5435; *Ill. Hort.*, 3 ser., t. 167.

A. CORNUTA.—See *ACROPERA ARMENIACA*.

A. LODDIGESII, *Lindley*.—An old and not very showy species, but an interesting one, as its flowers are very curious in their formation both in the bud state and when fully developed; the pseudobulbs are ovate and clustered, and from their base the drooping racemes of flowers are freely produced, the long ovary curving inwards so as to bring the flowers near to the rachis; they are of a pale tawny yellow, with the lip brownish-red, and give out a powerful

odour resembling that of wall-flowers; blooms during the summer months, but does not last long.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3563; *Loddiges, Bot. Cab.*, t. 1645; *Hooker's First Century*, t. 69
 SYN.—*Maxillaria galeata*; *Gongora galeata*.

ADA, Lindley.

(Tribe Vandeeae, subtribe Oncidiaceae.)

A small genus of epiphytal plants bearing gay and showy flowers. It is distinguished from *Brassia* by its free but erect connivent perianth divisions, which are appressed below, and spread only a little at the apex; by the wingless column, the base of which is dilated, and united with the base of the narrow undivided lip; by the two lamellæ of the lip becoming confluent into a linear truncate appendage; and by the short obovate caudicle and circular gland of the pollen-masses. There are but two species known, natives of the Colombian Andes, where they are found at an elevation of 8,500 feet.

Culture.—This handsome genus is nearly allied to *Brassia*. It should be grown in pots, in a compost of peat and sphagnum moss, along with such plants as *Odontoglossum Alexandrae*, and should be treated in a similar manner. A few plants intermixed with the *Odontoglossums* produce a charming effect, the rich orange-vermilion colour of the flowers contrasting well with the delicate tints of *O. Alexandrae* and its congeners. As exhibition plants, when grown into good-sized masses, the *Adas* are unsurpassed, their flowers being of a colour which is very scarce amongst Orchids. They are, in fact, a fine addition to our now numerous cool-house species.



ADA AURANTIACA.

A. AURANTIACA, Lindley.—A compact growing evergreen species, attaining to about a foot in height, with long tapered pseudobulbs, narrow channelled leaves, and longer scapes, bearing a nodding distichous raceme of bright orange-coloured or cinnabar flowers, the linear-lanceolate segments of which are pressed together in the lower part, and spreading only at the apex. It is an extremely showy and interesting plant, blooming in the winter and early spring, and lasting for several weeks in perfection.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5435; *Bateman, 2nd Cent. Orch. Pl.*, t. 113; *Ill. Hort.*, 3 ser. t. 107; *Orchid Album*, ii. t. 53; *Lindenia*, v. t. 235; *Veitch's Man. Orch. Pl.* viii. opposite p. 130.

SYN.—*Mesaspinidium aurantiacum*.

A. LEHMANNI, Rolfe.—This is described by Mr. Rolfe in the *Gardeners' Chronicle*, 1891, N.S., Vol. x., p. 34. It appears to be more rigid in habit than *A. aurantiaca* and has shorter and stouter leaves, which are arcuate, linear, acute, coriaceous, dark green, marbled with grey blotches; sepals and petals bright cinnabar-orange, lip white. It flowers in summer. Introduced by Mr. F. C. Lehmann.—*United States of Colombia*.

ÆRANTHUS, Lindley.

(Tribe Vandeeae, subtribe Sarcantheeae.)

A very small genus allied to *Angraecum*, and founded by Lindley. There are but two species in cultivation at the present time, coming from Madagascar and the Comoro Islands.

Culture.—These plants require the same culture as that recommended for *Angraecum*.

A. GRANDIFLORUS, Lindley.—A very rare and interesting species, having distichous, ligulate leaves of a bright green; flowers solitary; sepals and petals canaliculate, acuminate white, tipped with yellow; lip cordate-lanceolate, white, yellowish at the apex. Blooms in July.—*Madagascar*.

FIG.—*Lindenia*, iv. t. 109.

A. LEONIS, Rehb. f.—This meritorious plant was discovered by Mons. Leon Humblot. The plant is dwarf, and has peculiar sword-like falcate leaves, very stout in texture, about a span long, closely set on the stem, and not cleft except at the point of junction therewith. The flowers remind one of a gigantic *Angraecum articulatum*, and are pure white as in that species, the lip being broad, concave and rounded. The racemes consist of as many as seven flowers, the long spurs of which are funnel-shaped at the base, filiform towards the apex, and appear to be always twisted upwards. Blooms in July.—*Comoro Islands*.

FIG.—*Gard. Chron.* N.S., xxiv. 80. figs. 17, 18; *Orchid Album*, v. t. 213; *Lindenia* i. t. 37; *Veitch's Man. Orch. Pl.*, vii. p. 134; *Journ. Hort.*, xxiv., 1892, p. 409, f. 71.

SYN.—*Angraecum Leonis*.

A. SESQUIPEDALIS.—See *ANGRÆCUM SESQUIPEDALE*.

ÆRIDES, Loureiro.

(Tribe Vandeeae, subtribe Sarcantheeae.)

A genus of noble evergreen epiphytal Orchids, remarkable for their distichously-arranged elegantly-curving leathery leaves, and their long, graceful, sometimes loosely-branched racemes of deliciously-scented delicately-coloured flowers. They resemble the *Saccolabiums* in many respects, especially in habit, but differ in having a long stalk to the

column, to which the base of the lip is articulately affixed, the under-side being produced into a spur at the back. Numerous species and varieties are recorded, natives of India, the Malay Archipelago, and Eastern Asia, extending to Japan.

Culture.—The species of *Aërides* are among the most beautiful of Orchids, many of them uniting every good quality that a plant can possess. Even when not in bloom the plants themselves are interesting objects, and give a tropical character to the collections in which they are found. The stems are straight or slightly bent, the leaves being attached on opposite sides, and they are nourished by large fleshy roots, shooting out horizontally from near the base. The flowers, which are rich and waxy, proceed from the axils of the leaves, and extend in delicate racemes one or two feet in length, while their fragrance is so powerful as to fill the house in which they are grown with a grateful perfume.

These plants are of easy culture, and if properly attended to seldom fail to do well. They are found growing on the branches of trees, generally on such as overhang streams of water; and to grow them in anything like perfection the climate in which they grow wild must in most respects be imitated. We find they succeed best with a good supply of heat and moisture during their growing season, which is from about March to the latter end of October. During that time we keep the temperature, by day, from 70° to 75°, allowing it to rise to 80° and 85°, or even higher, provided the house is shaded from the rays of the sun. The night temperature should range from 65° to 70° in March and April, and afterwards it may rise five degrees higher. In the autumn and winter months the temperature should average from 60° to 65° by night, while by day a little more heat will be of benefit to the plants; they like a liberal supply of moisture about their roots, but too much must not be given them in dull weather. It is much to be regretted that these beautiful plants are fast going out of fashion, many cultivators having entirely given up their culture; we hope the day may not be far distant when they may again appear as popular favourites.

Some persons grow their *Aërides* in baskets and rafts made of wood, but they may also be grown in pots or pans—a mode of culture successfully followed by many of our cultivators, especially by those who exhibit, for when in pots the plants are more easily moved about. Another point in favour of pot culture is that baskets soon decay; but

if the plants are not required for exhibition, we should advise some of the smaller kinds to be grown in baskets, in which they have a fine appearance, especially if there is room for suspending them, allowing the roots to grow out of the basket. All the kinds will succeed well in this way.

In pot culture fill the pots about three-parts full of potsherds, placing large pieces at the bottom, but finishing off at the top with smaller ones; above this fresh living sphagnum moss should be used, and when this begins to decay fresh moss should be given to keep all healthy. They all do well on blocks of wood, but to grow them in perfection in this way they require greater care as regards moisture. Sphagnum moss and broken potsherds have proved the best materials for filling baskets. They require frequent watering at the roots during the growing season; indeed, they should never be allowed to become thoroughly dry, not even during their season of rest, as if so they are liable to shrivel and lose their lower leaves.

The species of *Aërides* require but little repose, and the moss should always be kept damp, but during the dull months of winter no water should be allowed to lodge on the leaves or in the heart of the plant, as it would be very apt to rot them. The plants, if not in pots, should be suspended from the roof, but not very near the glass, lest they should be affected by cold.

The *Aërides* should be kept perfectly free from insects, especially the different kinds of scale. There is a small kind in particular which is apt to infest them, and which, if allowed to increase, will speedily make the plants look yellow and unhealthy. It may be kept under by washing with warm water and soft soap, applied with a sponge, and left on the leaves for some twenty-four hours, when all remains of the soap should be removed with clean water. They are also subject to the attacks of the red Thrips, especially on the young leaves; this can be kept down by frequent applications of tobacco powder or steaming; if allowed to remain these red Thrips considerably damage the young growth, turning it red and brown. The black Thrips sometimes attacks the older leaves and disfigures them very much; they should be eradicated by frequent steaming and sponging.

These plants are propagated by cutting them into pieces, with roots attached to each piece. Some kinds, however, are shy in throwing up

young shoots, and this makes these sorts very scarce. Those of the *A. odoratum* group are the most easy to increase, and *A. crispum* sends out roots more freely than some others. If the plants ever get into an unhealthy condition, the best way is to cut away the bottom portion and give the remainder fresh moss, with plenty of water at the roots.

A. AFFINE, Wallich.—A beautiful dwarf species, producing leathery bluntly two-lobed leaves, a foot long, spotted with brown, and bearing erect spikes of light rose-coloured flowers, spotted on the lip, which is lozenge-shaped and entire, with a darker shade of the same colour; it blooms in June and July. This plant, which is of slow-growing habit, does not root freely, and requires less moisture than any of the other kinds.—*India*.

FIG.—*Lindl. Sert. Orch.*, t. 15; *Revue Hort. Belge*, 1891, p. 169, t. xv. (var *golefroyae*).
 SYN.—*A. multiflorum*; *A. roseum*, Hort.

A. AFFINE SUPERBUM, Hort., is a fine variety, much stronger in growth than the type; the flowers are also larger, and of a richer colour. The best variety we have seen bloomed with Mr. B. Findlay, at the Manchester Botanic Gardens. The spikes of this, as well as those of the species, are apt to damp off at the ends before the flowers open—an evil which is often caused by too much moisture having been given. It continues a long time in perfection.—*India*.

A. AUGUSTIANUM, Rolfe.—A new species discovered by M. Auguste Linden. It is allied to *A. Roebelinii*, differing in the spur being longer and more erect, and by the lateral lobes of the lip; the colouring of the flowers is rose instead of as in *A. Roebelinii*.—*Philippine Islands*.

FIG.—*Lindenia*, v. t. 210; *Gard. Chron.*, 3 ser., vii., 1890, p. 233, fig. 86.

A. BALLANTINIANUM, Rehb. f.—A fine *Ærides* in the way of *A. suavisimum*, but dwarfer, and having rather short bilobed leaves. The dorsal sepal and the petals are white and somewhat toothed, while the lateral sepals are usually adorned with a purple eye-like blotch at the tip; the side lobes of the lip are equal to or shorter than the middle lobe, retuse and toothed at the tip, orange, sometimes self-coloured, at other times with purple streaks and transverse bars of different dimensions. It is named in honour of Mr. Ballantine, gardener to Baron Schröder, a great enthusiast among East Indian Orchids.—*Native Country not stated*.

A. BROOKEI.—See *ÆRIDES CRISPUM*.

A. CORNUTUM.—See *ÆRIDES ODORATUM*.

A. CRASSIFOLIUM, Parish and Rehb. f.—This species is one of the most beautiful of the genus, and has been called the king of all the *Ærides*. The plant is very stout and compact in growth, with thick coriaceous oblong obliquely-bilobed dark green leaves, and long drooping spikes of amethyst-purple deliciously-fragrant flowers, which are produced in May and June, and continue perfect for a very long time. The flowers are amongst the largest in the family, and the bluntly ovate projected middle lobe of the lip is of a deeper,



AËRIDES C
(From the *Gur*



RASSIFOLIUM.
(*Chronicle.*)

richer purple than the rest of the flower. Sir Trevor Lawrence, Bart., has been most successful in flowering this gorgeous species, which is best grown in a basket suspended near the glass.—*Burmah*.

FIG.—*Warner, Sel. Orch. Pl.*, 3 ser., t. 12; *Past. Fl. Gard.*, reissue, t. 1; *Gard. Chron.*, N.S., viii. 492, fig. 96; *L'Orchidophile*, 1885, p. 370; *Veitch, Man. Orch. Pl.*, vii., opposite p. 66.

A. CRISPUM, *Lindley*.—A very beautiful free-growing species, of stiff erect habit, sometimes attaining from four to five feet in height. The stem is stout and of a purple colour, the dark green leaves five to ten inches long, blunt and obliquely bilobed, and the flowers grow in long drooping racemes larger than those of any other species, white, tipped with rosy pink, deliciously scented, the lip three-lobed and upwards of an inch long, the middle lobe fringed and almost wholly of a bright rose or sometimes a deep rose purple. The blossoms, which are abundant, are produced in June or July, and last two or three weeks in good condition; they are very distinct in appearance from those of any other kind. This species is best grown in the *Cattleya* house.—*India: Bombay*.



ÆRIDES CRISPUM.

FIG.—*Bot. Reg.*, 1842, t. 55; *Bot. Mag.*, t. 4427; *Flora des Serres*, i. t. 13; v. t. 438; *Ill. Hort.*, t. 123; *Past. Mag. Bot.*, ix. 145; *Veitch, Man. Orch. Pl.*, vii. opposite p. 67.

SYN.—*A. Brookei*.

A. CRISPUM LINDLEYANUM, *Hort*.—A charming variety also from India, with large branching spikes, bearing handsome blossoms, of which the sepals and petals are white, and the lip is large, of a rich rosy pink; it flowers in April and May. The growth is similar to that of *A. crispum*, and it requires the same kind of treatment.—*Coonoor*.

FIG.—*Wight, Icon.*, t. 1677.

SYN.—*A. Lindleyanum*.

A. CRISPUM WARNERI, *Williams*.—A splendid free-flowering variety from India. In its stems and leaves it closely resembles *A. crispum*, but the habit and growth are more compact, and the leaves are smaller and more slender; the blossoms, which are produced in June and July, are white and rich rose colour, and they last from three to four weeks in perfection.—*India*.

FIG.—*Orchid Album*, vii. t. 293.

SYN.—*A. Warneri*.

A. CYLINDRICUM.—See *ÆRIDES VANDARUM*.

A. DOMINIANUM, *Hort. Veitch*.—A fine and very rare garden hybrid, the produce of a cross between *A. Fieldingii* and *A. affine*, producing rich rose-coloured flowers, of the colour of those of *A. Fieldingii*, but having the shape and markings of *A. affine*. It is sometimes called *A. Fieldingii hybridum*, and is one of the most beautiful orchidic variations which has been obtained as the result of judicious hybridising.—*Garden Hybrid*.

A. ELLISII.—See *ÆRIDES VIRENS* ELLISII.

A. EMERICII, *Rchb. f.*—This new species is, according to Prof. Reichenbach, allied to *A. virens*, but is more elegant in habit, and the leaves are longer and narrower than in that species, being elongate-lorate, and bilobed at the apex. The flowers are in drooping racemes, the sepals and petals white with a broad purple-lilac stripe down the centre of each, and the lip white with the middle lobe purple-lilac, and marked with numerous small spots of the same colour on the interior portion of the spur; it flowers in September and October.—*British India*.

A. EXPANSUM, *Rchb. f.*—A grand plant, allied to *A. falcatum*, but the leaves are broader, and of a light green colour. The flowers are produced in elongated racemes, and have the sepals and petals creamy white marked with purple, the well-expanding lip having amethyst blotches on the lateral lobes and on the sides of the middle lobe, the broad anterior portion of which is deep purple and the spur greenish; it flowers in June and July.—*India*.

FIG.—*Gartenflora*, 1889, t. 1296.

SYN.—*A. falcatum expansum*.

A. EXPANSUM LEONIAE, *Rchb. f.*, is a fine variety of the preceding, and was first flowered by H. J. Ross, Esq., Castagnola, Lastra à Signa, Italy. The flowers are not so closely set on the spike as in *A. falcatum*, nor is the foliage so densely set.—*India*.

FIG.—*L'Orchidophile*, 1885, p. 301; *Orchid Album*, vii. t. 328.

A. FALCATUM, *Lindley*.—A fine free-growing plant, with a good deal of the habit of *A. crispum*, the leathery leaves are obtuse and obliquely mucronate at the apex, attaining ten inches in length, and of a dark green colour, with a bluish metallic tint on the upper surface. The flowers grow in dense pendulous racemes, of a creamy white with a crimson spot at the apex of the sepals and petals, and the lip, which is three-parted, with the lateral lobes obtusely falcate, and the middle obovate lobe convex and ciliated, is deep rose in the middle, the edges white barred with rose. It is a distinct and striking species, and was first flowered in 1847 by Mr. Eyles, when gardener to Sir G. Larpent, of Roehampton, and was shown at Chiswick in June of that year, when it received the first prize as a new plant; hence the name of *A. Larpentae*, under which it is sometimes known.—*India*.

FIG.—*Xenia Orchid.*, i. t. 92.

SYN.—*A. Larpentae*, Hort.

A. FALCATUM EXPANSUM.—See *ÆRIDES EXPANSUM*.

A. FIELDINGII, *Lindley*.—A magnificent free-flowering species of bold and striking character, of which there are many distinct varieties, both in regard to growth and flowers. It is one of the finest Orchids in cultivation, and is popularly known as the Fox-brush *Ærides* on account of its long dense raceme of flowers. The plant grows from two to three feet high, with broad fleshy obliquely two-lobed leaves, eight or ten inches long, and in some of the varieties of a dark green colour, while in others they are of a lighter shade. The flowers grow in drooping racemes, which sometimes attain a length of three feet, and are often branched; the flowers are unusually large, white

beautifully mottled with clear bright rose colour, and have a rich rose-coloured lip; they are produced during May, June, and July, and continue for three or four weeks. This makes a fine exhibition plant, and Prof. Morren well observes, "l'inflorescence rameuse est toujours somptueuse."—*India: Sikkim, Assam, &c.*

FIG.—*Jennings, Orchids*, t. 20; *Belgique Hort.*, 1876, tt. 18, 19; *Orchid Album*, viii. t. 309; *Lindinia*, iii. t. 97; *Journ. Hort.*, xiv. 1887, p. 149, f. 24.

A. FLAVIDUM.—See *AERIDES SUAVISSIMUM*.

A. GODEFROYANUM, *Rchb. f.*—The flowers of this species have some resemblance to those of *A. maculosum*. Petals and sepals pale rose with streaks and spots of amethyst; lip almost white, provided with a very small angular spur.—*Cochin China*.

FIG.—*L'Orchidophile*, 1887, p. 241, with plate.

A. HOULLETIANUM, *Rchb. f.*—This most distinct and beautiful species was exhibited by Sir T. Lawrence, Bart., in 1876, when it was certificated by the Royal Horticultural Society; previous to this it had been flowered by Mr. Lüddemann, of Paris. The growth, including roots, foliage, and habit, resembles that of *A. virens*, the leaves being short, lorate, and bluntly two-lobed at the apex. The flowers, which are large and borne on dense many-flowered racemes, resemble in form those of *A. falcatum*, but the sepals and petals are buff-coloured tipped with a single spot of magenta, and the lip is creamy-white with a wedge-shaped blotch of magenta on the anterior part of the subrhomboid fimbriated middle lobe, and bearing lines of the same colour on the semifalcate side lobes. It flowers in May and June.—*Cochin China*.

FIG.—*Xenia Orchidacea*, iii. t. 204; *Ill. Hort.*, xxix. t. 455; *Lindenia*, iii. t. 103; *L'Orchidophile*, 1890, p. 17; *Warner Sel. Orch.*, Pl. iii. t. 39; *Revue Horticole*, 1891, p. 324 (plate) (var. *majus*).

A. HUTTONI.—See *AERIDES THIBAUTIANUM*.

A. ILLUSTRE, *Rchb. f.*—This is, according to Prof. Reichenbach, a grand plant, imported with *A. crispum*, and supposed to be a natural hybrid. It has very short broad leaves marked with a few dark spots, and unbranched racemes of flowers in the way of *A. maculosum*, but larger, the sepals and petals being broader, with a lilac hue over the white and with very few blotches, and these mostly on the inner side of the petals; the lip is very fine, rich amethyst, purple, with the longitudinal basal markings characteristic of *A. maculosum*.—*India*.

A. JAPONICUM, *Linden et Rchb. f.*—This, though quite a diminutive plant, nevertheless bears comparatively large flowers, and is a pretty and interesting miniature epiphyte. The leaves are short, linear-oblong, leathery, and, as usual, obliquely bilobed at the apex. It produces a drooping raceme of about eight flowers, which are developed in June and July, and are of a greenish-white, the lateral sepals having some concentric purplish bars near the base, and the obovate spatulate crenated lip a raised dark violet-purple median ridge and a few paler purple spots; it is a cool-house species.—*Japan*.

FIG.—*Bot. Mag.*, t. 5798; *Ill. Hort.*, xxix. t. 461.

A. LARPENTAE.—See *AERIDES FALCATUM*.

A. LAWRENCIAE, *Rehb. f.*—This rarity, a plant of which was imported by Mr. F. Sander, and purchased by Sir T. Lawrence, Bart., for the sum of 235 guineas, proves to be a grand and unique novelty. The habit of growth resembles that of *A. quinquevulnerum*, but in its flowers it comes near *A. odoratum*, though they are far superior to that kind in their dimensions. The floral racemes exceed a foot in length, and the individual flowers are nearly as large as those of *A. crispum*; the sepals are at first greenish, then waxy-white, and finally yellow, the petals are flushed at the tip with fine purple, and the ligulate denticulate middle lobe of the lip is also purple, with two longitudinal purple stripes passing from the disk to the mouth of the spur, which is elongated and tipped with green; the tall erect lateral lobes of the lip are oblong-dolabriform; it flowers during the autumn months; and was shown in fine condition in 1884, by Baron Schröder.—*Mindanao*.

FIG. *The Garden*, 1889, xxxv. p. 485; *Orchid Album*, vi. t. 270; *Veitch's Man. Orch. Pl.*, vii. pp. 71 and 72.

A. LAWRENCIAE AMESIANUM, *Sander*.—A strong growing variety producing very long racemes, flowers large, orange-yellow; petals and sepals tipped with purple.—*Malay Archipelago*.

FIG. *Xenia Orchidacea*, iii. t. 252.

A. LEEANUM, *Rehb. f.*—This distinct species resembles *A. quinquevulnerum* in its habit of growth and foliage. The flowers, which are sweet-scented, are produced in short dense racemes, and are amethyst-coloured with a green spur. It has been named in honour of W. Lee, Esq., late of Leatherhead, once an enthusiastic patron of Orchid culture; it flowers during the winter months.—*India*.

A. LEPIDUM, *Rehb. f.*—A neat and pretty species, introduced by Major-Gen. Berkeley. It has lorate leaves, somewhat narrower than those of *A. odoratum*, and obtusely bilobed at the end. The many-flowered ascending racemes are sometimes as much as eighteen inches in length, and covered with flowers as large as those of *A. affine*, which are white, with the sepals and petals tipped with purple, and the triangular projected anterior part of the lip also purple; the spur is slender, cylindrical, curved, and nearly as long as the stalked ovary.—*British India*.

A. LINDLEYANUM.—See *AERIDES CRISPUM LINDLEYANUM*.

A. LOBBII, *Hort. Veitch*.—A free-flowering and handsome species, producing long spikes of rosy pink and white blossoms. The leaves are lorate, very leathery, channelled, obliquely bilobed, of a light green here and there dotted with purple, about eight inches long, and nearly two inches wide. The flowers are very numerous, white, slightly tinted with soft rose and faintly dotted towards the tips, the lip washed with violet, the colour strongest on each side the white central line of the broad ovate anterior part. Lemaire remarks that the column and anther-bed have a striking resemblance to the neck and beak of a bird. Altogether a very showy kind, and one of our best *Aerides* for exhibition. There are several varieties, many of them producing long branching spikes, and making a fine display when in bloom. The finest specimen we ever saw was in the select collection of J. Broome, Esq., Didsbury, and has been

exhibited by him on several occasions at the Manchester Exhibitions. It flowers during June and July.—*Moulmein*.

FIG.—*Ill. Hort.*, t. 559; *Orchid Album*, i. t. 21; *Veitch, Man. Orch. Pl.*, vii. opposite p. 75.

A. LOBBII AINSWORTHII, *Williams*.—A very fine form of the type, producing spikes about two feet long, which are well branched; the colour is very bright and more effective than in the type. It was first flowered by the late R. F. Ainsworth, Esq., M.D., of Manchester, and was exhibited by his gardener, Mr. Mitchell, at the Royal Horticultural Society's Show at Preston.—*Moulmein*.

A. MACULOSUM, *Lindley*.—A stout dwarf compact-growing Orchid of great beauty, having stiff broad obliquely-obtuse dark green leaves, eight inches long, spotted with purple on the outer side near the base, and producing drooping branched racemes of pale rosy flowers more or less spotted with purple, and having a large bright rosy-purple ovate-obtuse wavy anterior lobe to the lip, which has besides two small acute lobes at its base. These flowers are deliciously fragrant, and very striking in colour; they are produced about June and July, and if they are kept dry they will last four weeks in perfection. The species is one of slow growth, which is the reason we so seldom see fine plants.—*India: Bombay*.

FIG.—*Bot. Reg.*, 1845, t. 58; *Part. My. Bot.*, xii. 49.

A. MACULOSUM FORMOSUM, *Linden*.—A fine variety, which produces large and strongly-scented flowers. The petals and sepals are white, washed and spotted with crimson-purple.

FIG.—*Lindenia*, i. t. 11.

A. MACULOSUM SCHRÖDERI, *Williams*.—A magnificent free-growing plant, much stronger than *A. maculosum*, and more in the way of *A. crispum*, with dark green foliage, ten inches long. The flowers are very delicate, and deliciously scented, the sepals and petals being almost alike—white, tinged with lilac and spotted with rose, and the lip or labellum of a beautiful rosy magenta colour; it flowers in June or July, lasting three weeks in perfection. This was first flowered by J. H. Schröder, Esq. It is supposed that there was only one plant imported, and that the stock at present in this country is from that one plant, on which account it is still very rare.—*Hills near Bombay*.

FIG.—*Henfrey, Gard. Mag. Bot.*, ii. 121; *Pescatorea*, t. 33; *Lem. Jurd. Fl.*, t. 54; *Gard. Chron.*, N.S. xiii. 493. fig. 87 (woodcut showing habit).

A. MARGINATUM, *Rehb. f.*—A lovely species, allied to *A. quinquemnerum*, which it resembles in habit. It has broadish bilobed or emarginate lorate leaves, which are keeled on the under surface, and fine drooping racemes of handsome flowers densely packed on the rachis; the sepals and petals are of a very pale yellowish tint, with the anterior border purple; the spur is conical and of a light green; the side lobes of the lip are semi-oblong, toothed in front, and of a deep orange colour, while the midlobe is oblong-ligulate toothletted, yellow, changing to a deep sepia brown; a linear transverse callus occurs at the front side of the mouth of the spur, and a similar but narrower one behind. The colours are unusual in this genus, so that the plant has a peculiar interest for Orchid growers.—*Philippine Islands*.

A. McMORLANDI, *Hort.*—A magnificent species, compact in growth, and having bright green foliage, about ten inches in length. The blossoms are produced freely in long branching racemes in June and July, and continue three or four weeks in perfection; they are white spotted with peach-colour. The only plant we have known of this was in the collection of E. McMorland Esq., in compliment to whom it is named.—*India*.

A. MARGARITACEUM, *Hort.*—This pretty species has spotted leaves, and in its general appearance somewhat resembles *A. maculosum*; it produces spikes of pure white flowers during summer.—*India*.

A. MENDELI, *Hort.*—This very handsome and distinct species has been named in honour of the late S. Mendel, Esq., a great lover of plants and a munificent patron of horticulture. It has a stem about the thickness of that of *A. virens*; the leaves, which are about seven and a half inches long, and one and a half in breadth, are smooth, shining, and of a light green colour, and have the habit of clasping the stem at the base, like those of *A. quinquerulnerum*. The flowers are produced upon drooping spikes, and resemble those of *A. Larpentae* as to size and shape, but are entirely distinct in colour, being pure white tipped with rose.—*India*.

A. MITRATUM, *Rchb. f.*—A very distinct and charming species, of small stature. The stems are short, with abundant thick aerial roots, the leaves being long (two feet) cylindric attenuately-acuminate or whip-like, dark green, and the flowers in numerous dense erect racemes, five to ten inches long, the sepals and petals pure waxy-white, and the broadly trulliform obtuse lip rosy purple. A rare and elegant species.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5728.

A. MULTIFLORUM.—See *AERIDES AFFINE*.

A. NOBILE, *Warner*.—A magnificent free-flowering fragrant species in the way of *A. suavisimum*, but with the flowers larger and of a better colour; we have seen racemes of this plant from two to three feet long, and branched. The habit of growth is vigorous; the leaves are ligulate, obliquely emarginate with an interjected tooth, and the racemes are pendent and profusely flowered, the flowers being creamy white, spotted and shaded with rose, the lip three-lobed, the lobes of nearly equal length, the middle one tongue-shaped, and bifid at the apex, and the long incurved spur being yellowish; it blooms in June, July, and August, and keeps in perfection for three or four weeks. The flowers as well as the rachides are clammy.—*India*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 11; *Gartenfl.*, t. 641.

A. ODORATUM, *Loureiro*.—A good old species, of free-growing habit, and one of the most abundant-flowering of the genus. The leathery leaves are ligulate, keeled, pale green, and obliquely obtuse at the apex. It blooms in June or July, and remains two or three weeks in good condition; the flowers grow in pendulous many-flowered racemes longer than the leaves, and are creamy white, blotched and shaded with pale magenta, and have a delightful perfume; the lip is remarkable for its large upturned spur. We have seen

specimens five feet high and four feet in diameter, which produced fifty to sixty spikes of bloom every year. It is altogether a noble and very useful plant.—*China, Cochin China, and India.*

FIG.—*Bot. Reg.*, t. 1485; *Bot. Mag.*, t. 4139; *Knoles and West. Fl. Cub.*, t. 75; *Maudsl. Botanist*, iv. t. 186; *Hort. Parad.*, ii. t. 4; *Hooker's First Century*, t. 89.

SYN.—*A. cornutum*, Roxb.

A. ODORATUM CORNUTUM, *Hort.*, is a handsome free-flowering variety, distinct in growth from the preceding. Its floral racemes are about twelve inches long, furnished with pink and white flowers, which are produced in May, June, and July, and continue for upwards of three weeks in bloom.—*India.*

A. ODORATUM DEMIDOFFI, *Linden.*—This handsome variety differs from the type by the flowers being more strongly spotted, and by the spots on the lip being of a much darker purple.

FIG.—*Lindenia*, i. t. 14.

A. ODORATUM MAJUS, *Hort.*, is like *A. odoratum* in its growth, and differs only in the larger and longer spikes of flowers; it makes a fine exhibition plant and may be retarded very easily without the slightest injury.—*India.*

FIG.—*Gartenfl.*, viii. t. 273.

A. ODORATUM PURPURASCENS, *Hort.*, is a somewhat scarce variety, and one of the very best. It is robust in habit, with broad dark-green leaves, and is a free bloomer, producing long massive racemes of large flowers, which are white, tipped with bright pink; it blossoms during May and June.—*India.*

A. ORTGIESIANUM, *Rehb. f.*—A species allied to *A. quinquevulnerum*. The sweetly-scented flowers are pale yellow, faintly spotted with rose; petals and sepals tipped with a dingy red; the lip is pale, almost white, spur beneath the lip tipped with green; the side-lobes of the lip are, unlike those in most species of *Ærides*, clasped together instead of being erect. A rare plant.

FIG.—*Xenia Orchidacea*, iii. t. 252, f. 1-7.

A. PACHYPHYLLUM, *Rehb. f.*—A fine plant imported along with *A. crassifolium*. It has short very thick fleshy leaves, blunt and unequally bilobed at the apex, and short racemes of handsome light crimson-lake flowers, of which the sepals and petals are oblong-ligulate, the spur and column white, and the small insignificant lobes of the lip painted with purple.—*Burmah.*

A. QUINQUEVULNERUM, *Lindley.*—A splendid free-flowering Orchid of free habit, less compact-growing than many other species; the ligulate leathery light-green leaves are rounded and obliquely emarginate at the apex, with a small interjected apiculus. The racemes are pendent, densely flowered, longer than the leaves, the flowers having the sepals and petals white, spotted with rosy purple, and marked with five deep rosy purple spots at the tips; the tip of the lip is green, the sides pink, and the middle a deep crimson; it blooms in July or August, and lasts two or three weeks in bloom. There are several varieties, some with much richer coloured flowers than the others. This plant was formerly extremely rare, but it has recently been imported in large

quantities, so that cultivators will now have an opportunity of testing the beauty of this distinct *Aërides*.—*Philippine Islands: Manilla*.

FIG.—*Lindl. Ser. Orch.*, t. 30; *Part. Mag. Bot.*, vii. 241; *Jennings, Orch.*, t. 30; *Lindenia*, iv. t. 150.

A. QUINQUEVULNERUM FARMERI, *Williams*, is a variety of the preceding, producing long spikes of white flowers; it grows like *A. quinquervulnerum*, and blooms about the same time. This plant first came under our notice at Nonsuch Park, Cheam, the seat of W. F. G. Farmer, Esq.; it is extremely rare.—*Manilla*.

A. REICHENBACHII, *Linden*. A beautiful species allied to *A. virens* and *A. quinquervulnerum*, the latter of which it resembles in habit and foliage. It has long dense drooping racemes of flowers, of which the sepals are white blotched with purple, the dorsal one cuneate-ovate, with a large spot near the apex, and the lateral ones bluntly triangular; the linear falcate petals are also white with small dots of purple, and having a large purple spot near the apex; the lip is trifid, white dotted with purple, with the yellow side lobes erect and dolabriform, and the middle one cuneate-ligulate. The disk of the lip runs out behind into a conical incurved spur, which is white below, green at the tip.—*Borneo*.

FIG.—*Xenia Orchid*, ii. t. 104; *Lindenia*, i. t. 1.

A. REICHENBACHII COCHINCHINENSE, *Hort*.—A variety which has the inflorescence more dense; and the sepals are not blotched, but neatly striped at the apex, and the yellow of the lip is much deeper. It has been flowered by Sir Trevor Lawrence, Bart., and proves to be a very grand thing.—*Cochin China*.

A. ROEBELINII, *Rchb. f.*—According to Prof. Reichenbach, this is a fine *Aërides* presenting some new features. It has the habit of *A. quinquervulnerum*, and produces erect racemes a foot in length bearing as many as twenty-five very fragrant flowers as large as those of the species just named, the sepals and petals greenish white with white tips, the petals often toothletted, the lip rosy, with yellow oblong side lobes lacerated on the upper edge, as is the much longer oblong curved middle lobe. The flowers have a short conical spur.—*Philippine Islands*.

A. ROHANIANUM, *Rchb. f.*—This is near to *A. suavisimum*, its racemes being longer and denser. The sepals are white, rose, or mauve rose, always edged with white; the segments of the lip are narrow, white, and having two purple lines running through the centre, accompanied by two purple blotches; the spur, which is projected in front, is orange-coloured with numerous small purple spots.—*Eastern Asia*.

A. ROSEUM, *Loddiges*.—A handsome profuse-flowering species of slow growth, but reaching two or three feet high, with light green foliage a foot long, truncate and toothed at the apex, and long branching spikes of white flowers tinted with rosy magenta, the rhomboid lip deeper in the centre, and twice as long as the ovary. We have seen the flower spikes two feet long, with

three or four branches on each spike; it is a profuse bloomer, and has been exhibited with from thirty to forty spikes. It makes one of the finest of exhibition plants, flowering about June or July, and continuing in blossom for three or four weeks.—*India*.

FIG.—*Pact. Fl. Gard.*, t. 60; *Bot. Mag.*, t. 4049; *Lem. Jard. Fl.*, ii. t. 200; *Id. Illust. Hort.*, t. 88; *Gartenfl.*, t. 267.

SYN.—*A. affine*, Hook. et Hort.

A. ROSEUM SUPERBUM, Moore.—This is a splendid variety of the preceding, the colour being richer and the flowers much larger. The plant is more compact in growth, and is of a free-flowering habit, producing a large branched spike.

FIG.—*Warner, Sel. Orch. Pl.*, 3 ser. t. 22.

A. RUBRUM.—A very nice cool-house species, with dark-green foliage; a very distinct plant, not so showy as many of the preceding ones, but well worth growing; indeed, any one that can appreciate *Saccolabium ampullaceum* would like this, the colour being similar and the spikes longer. This plant should be grown in the *Odontoglossum* house.—*Madras Hills*.

A. SANDERIANUM, Rehb. f.—This grand novelty, which was imported by Mr. F. Sander, of St. Albans, after whom it is named, proves to be an important and valuable acquisition, allied to *A. Lawrenceae*. It is of vigorous growth, with broad short retusely bilobed leaves, and long well-furnished racemes of handsome flowers, which are very large, measuring fully one and a half inch from the tip of the dorsal sepal to the tip of the curved spur. The sepals and petals are creamy white, distinctly tipped with magenta, recurved at the margin, the lateral sepals broader and adnate on the lower side to the back of the lip; the lip is large, the spur being fully half an inch in diameter, and very attractive, having the upper half of the side lobes of a clear yellow and frilled at the edges, while the middle lobe, which is folded up between them and looks like a purple crest, is obovate, frilled at the edges, and of a bright magenta; the lower end of the spur is greenish yellow. The little white column, which resembles a bird's head, is quite hidden by the upper part of the lip or spur, which closes over it.—*Eastern Tropical Asia*.

A. SCHRÖDERI.—See *ÆRIDES MACULOSUM SCHRÖDERI*.

A. SUAVISSIMUM, Lindley.—A distinct and desirable species of free growth, having light-green foliage ten inches long, spotted with brown, and very long drooping spikes of deliciously-fragrant flowers, of which the sepals and petals are white tipped with rosy pink, the incurved spur tipped with deep rose, and the lip, which has a very small bifid middle lobe, has a blotch of pale lemon-yellow in the centre. The blossoms are developed in July, August, and September, and last in good condition for three weeks. We have flowered several varieties of this species, some of which have proved to be much better than others.—*Straits of Malacca*.

FIG.—*Pact. Fl. Gard.*, t. 63; *Lem. Jard. Fl.*, t. 213; *Lindley*, vii. t. 307; *Vitch's Man. Orch. Pl.*, vii. p. 79.

SYN.—*A. flavidum*.

A. SUAVISSIMUM MACULATUM, *Williams*.—A very handsome form of the preceding, and, like it, deliciously fragrant; the sepals and petals are white, profusely spotted with pink, as also is the lip. It bloomed very freely in the collection of the late Thomas Dawson, Esq., of Meadow Bank.

A. TESTACEUM.—See *AERIDES WIGHTIANUM*.

A. THIBAUTIANUM, *Rchb. f.*—A handsome free-growing species, with somewhat the appearance of *A. quinquevulnerum*; it produces, however, a very different inflorescence, the floral raceme being very long, with the flowers rather openly set upon it; the sepals and petals are of a beautiful rose colour, and the lip bright amethyst. It is sometimes called *A. Huttoni*.—*Java*.

• *SYN.*—*Aerides Huttoni*; *Saccolabium Huttoni*.

A. VANDARUM, *Rchb. f.*—A rare and distinct slender-growing plant, in habit resembling *Vanda teres*, but the leaves, which are straight and cylindrical, are much more slender than those of that species; the flowers, which are produced in pairs from the side of the stem opposite the leaves, are larger than those of *A. crispum*, pure white, with a slight tinge of pink on the inner surface of the column. This plant has been cultivated in our gardens for several years under the erroneous name of *A. cylindricum*.—*India: Coimbatore*.

FIG.—*Bot. Mag.*, t. 4982; *Orchid Album*, iii. t. 116; *Gard. Chron.*, N.S., xxiv., 1885, p. 629, fig. 143; *id.*, xxv., 1886, p. 405, fig. 81; *Veitch's Man. Orch. Pl.*, vii., p. 80; *Journ. Hort.*, xxvi., 1893, p. 293, fig. 56.

SYN.—*A. cylindricum*, Hook, non Wight.

A. VEITCHII, *Hort.*—A beautiful species of the *A. affine* group. The leaves are about eight inches long, of a dark green colour, and covered with small spots resembling those of the *A. Lobbii*. The flowers are in long drooping branched racemes, and are set on the rachis like so many little pearly spotted shells, the colour being white, beautifully dotted with soft rosy pink; it blooms during June and July, and lasts about three weeks in good condition.—*India*.

A. VIRENS, *Lindley*.—A handsome and desirable fragrant-blossomed species, of free growth. The leaves are obliquely rounded at the apex, of a bright light-green colour, eight inches long. The flowers are borne on long drooping racemes, and are of a light peach colour, spotted with purple, the lip being spotted with crimson; it blooms in April, May, and June, the flowers remaining long in perfection.—*Java*.

FIG.—*Bot. Reg.*, 1844, t. 41; *Part. Mag. Bot.*, xiv., 197; *Orchid Album*, iv., t. 160; *Veitch's Man. Orch. Pl.*, vii., opposite p. 81.

A. VIRENS DAYANUM, *Hort.*, is a remarkably fine variety, with very long flowered racemes, which bloom about the same time as those of *A. virens* itself.—*India*.

A. VIRENS ELLISII, *Williams*, resembles *A. falcatum* in habit and appearance, but does not present the metallic blue tint on its leaves, being of a somewhat pale green; the leaves are about six inches long and one and a half broad. The racemes are eighteen to twenty inches long, bearing upwards of three dozen large flowers, the sepals and petals of which are white, suffused with rose and tipped with amethyst, the lower sepals being very round and broad; the lip is large, its side lobes white, beautifully freckled towards the base with short lines



AËRIDES VANDARUM.
(From the *Gardener's Chronicle*.)

of amethyst, while the middle lobe is broad, deep rich amethyst in colour, and the spur is stout, curved upwards, and tipped with brown; it blooms early in June, and lasts long in full beauty.—*Java*.

FIG.—*Orchid Album*, vii. t. 298.

SYN.—*A. Ellisii*.

A. VIRENS GRANDIFLORUM, *Hort.*, is a magnificent variety, with flowers larger than those of *A. virens*, white spotted with pink, and more graceful in their manner of growth; it blooms during April and May, and continues from three to four weeks in beauty.—*India*.

A. VIRENS SUPERBUM, *Hort.*, is another fine variety, the growth of which is the same as that of *A. virens*, except that the spikes and flowers are longer and of a brighter colour; it blooms about the same time, and remains long in perfection.—*India*.

A. WARNERI.—See *AERIDES CRISPUM WARNERI*.

A. WHETIANUM, *Lindley*.—A beautiful little plant, quite distinct in character, and resembling *Saccolabium curvifolium* in habit. The leaves are ^{Wightianum} ~~Whetianum~~ ^{lanceolate} ~~ovate~~ bilobed with an intermediate cusp, the short erect racemes have pale yellow flowers, the broad oblong rounded front lobe of the lip is white, with purple crests on the fleshy disk, and dotted with lilac; it blossoms during the summer months.—*India, Ceylon*.

FIG.—*Bot. Mag.*, t. 5138; *Flore des Serres*, t. 1452.

SYN.—*A. testaceum*; *Vanda parviflora*.

A. WILLIAMSII, *Warner*.—A grand and distinct species, extremely rare in collections. The leaves are broad, dark-green, and drooping, and the racemes of flowers are produced in great abundance, measuring from two to three feet in length, and often becoming branched; the colour of the flowers is a pinkish white; it blooms in June and July, and makes a fine Orchid for purposes of exhibition, on account of its free-flowering character, while from its delicate colour it associates well with other kinds. This species first flowered in the collection of the late C. B. Warner, Esq., of Hoddesdon.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 21.

A. WILSONANUM, *Sander*.—A very distinct dwarf *Aerides*, with a habit of growth similar to that of *A. odoratum*. The flowers are produced on drooping spikes, and are pure white with a lemon-yellow lip.—*Native Country not stated*.

AGANISIA, *Lindley*.

(Tribe Vandeae, *subtribe* Cyrtopodieae.)

A small genus of some half-dozen Tropical American Orchids which have a close affinity with *Zygopetalum*, but the flowers are usually smaller, and the column is not prolonged at the base, but is apodous.

Culture.—These plants are best grown on blocks or rafts. They require a liberal supply of water at the roots, and the hottest house. They are very scarce plants, and are propagated by dividing the bulbs.

A. COERULEA, *Rehb. f.*—A rare and beautiful Orchid, having strong creeping stems and large pyriform monophyllous bulbs; the spike springs from the side of the bulb, and produces from three to five flowers; sepals cuneate, oblong, acute, concave; petals cuneate, elliptic-apiculate, yellowish, light blue inside and outside, lip blade transverse reniform, undulate at margins, brown or bordered with light ochre.—*Rio Negro.*



AGANISIA COERULEA.

FIG.—*Gardeners' Chron.*, N. S. xxv., 1886, p. 720; *Orchid Album*, viii. t. 374.

A. CYANEA, *Lindley*.—A very fine and distinct Orchid, with blue flowers, allied to *Huntleya* and *Warrea*, but distinguished by its long narrow hypochil, saccate and five-lobbed in front, its short three-horned mesochil, and its concave epichil, which is ribbed at the base. The pseudobulbs are ovate, one-leaved, the leaves are upwards of a foot long and three inches broad, tapered

below into a furrowed petiole; and the flowers, which are as large as those of *Odontoglossum Pescatorei*, grow in close erect five-flowered racemes on peduncles about a foot long. The sepals and petals are subrotund, apiculate, light blue, paler within, and the lip light bluish purple with pale veins, the back and wings of the column streaked with red. The blue of the flower is almost pure. In habit the plant most resembles a creeping *Maxillaria*, forming a long rhizome between the pseudobulbs. It should be grown on a block.—*Brazil.*

FIG.—*Lindenia*, lii. t. 110.

SYN.—*Acacallis cyanea*.

A. IONOPTERA, *Rehb. fil.*—This plant was first found by Gustav Wallis, and at first sight reminds one of a *Bletia*; leaves narrow lanceolate, spike seven to ten flowered, individual flowers about one inch in diameter, sepals white flushed with purple, petals bluish purple, lip white lined with purple.—*South America.*

FIG.—*Lindenia*, vi. t. 287; *Bot. Mag.*, t. 7270.

SYN.—*Koellensteinia ionoptera*.

A. PULCHELLA, *Lindley*.—A rare and pretty dwarf Orchid, having a creeping rhizome, with very small pseudobulbs at intervals, each furnished with a solitary oblong five-ribbed leaf eight inches long, and producing from the base of the bulb erect racemes of flowers an inch and a half across, which

are white, with a blotch of crimson at the base, and a larger patch of yellow in the centre of the lip; it blossoms at different times of the year, and lasts two or three weeks in perfection.—*Demerara*.

FIG.—*Bot. Reg.*, 1840, t. 32.

A. TRICOLOR, *N. E. Brown*.—A species allied to *A. cyanea*, differing in the form and the colouring of the lip and sepals.—*Amazons*.

FIG.—*Lindenia*, i. t. 45.

ANGRAECUM, *Thouars*.

(Tribe Vandaeae, subtribe Sarcantheae.)

A very curious genus of Orchids, of which some score or more species are known, many of them being very handsome, and such as ought to be in every collection. In habit they resemble the *Aërides*, having like them the stems clothed with evergreen leathery distichous foliage, which in some kinds is regularly curved and very graceful, while the flowers are produced in long racemes from the leaf-axils; these flowers are characterised by their spreading sepals and petals, and by the long—sometimes very long—slender spur to the lip, which has a spreading entire or three-lobed limb. Even when not in bloom, the plants are objects of interest, and give a noble appearance to the house in which they are grown. The flowers are not so much prized as they ought to be, because they are produced at the wrong season for exhibition; but, blooming as most of the large kinds do in winter, they are invaluable to those who look for the beauty of ornamental flowering plants at that period. The blossoms continue for six weeks or more in perfection. If in vigorous health the plants generally flower every year, and also produce young plants at the base. The latter, if required, should be taken off when rooted; if not, they should be left on, in order to make a finer specimen.

The species are for the most part found in Tropical and Southern Africa, and in Madagascar and the Mascarene Islands.

Culture.—The *Angraecums* require the same treatment as the *Aërides*, and the potting material should be similar. Like them, too, they are best grown in the East Indian house. To this rule, however, *A. fulcatum* is an exception, as it succeeds best in the Mexican house. Some of the smaller-growing kinds, with drooping spikes, succeed best in baskets.

A. APICULATUM, *Hooker*.—A pretty dwarf species, introduced in 1844 by Mr. Whitfield. It resembles *A. bilobum* in its general aspect, having short stems, with distichous obovate-lanceolate, obliquely acuminate, striated, deep green leaves, and pendulous racemes of about a dozen flowers, which are white, with a slender pointed spur about two inches long.—*Sierra Leone*.

FIG.—*Bot. Mag.*, t. 4159; *Hooker's First Century*, t. 92.

A. ARTICULATUM, *Rehb. f.*—A very pretty dwarf species, related to *A. bilobum*, with cuneate-oblong, unequally-bilobed leaves, about six inches long, and producing stout peduncles, bearing at the end a raceme of creamy-white flowers, which are polymorphous, with a filiform spur, which is sometimes as long, at others three times as long, as the ovary. Introduced by the late Rev. W. Ellis.—*Madagascar*.

FIG.—*Reichenbachia*, ii. t. 55; *Lindenia*, viii. t. 380.

A. BILOBUM, *Lindley*.—An elegant little Orchid, of very compact growth, having a short rooting stem, furnished with cuneate-obovate dark green reticulately-veined leaves, which are deeply bilobed at the apex, and much shorter than the drooping racemes of ten to twelve flowers, which are of a blush-tinted white, with a slender bifid spur about two inches long; it blooms from October to December, and remains two or three weeks in good condition. We have grown this plant on a block, but it does best in a basket, where the roots may obtain plenty of moisture.—*New Guinea: Cape Coast Castle*.

FIG.—*Bot. Reg.*, 1841, t. 35.

A. BILOBUM KIRKII, *Rehb. f.*—This little gem was sent to us in 1882 by Sir John Kirk, in honour of whom it is named. The plant is a dwarfer grower than *A. bilobum*, having narrower leaves, ending in two divergent lobes, and bears drooping racemes of pure white flowers, which are furnished with slender pale brown spurs, two and a half to three inches long. It is a pretty subject for basket culture.—*Zanzibar*.

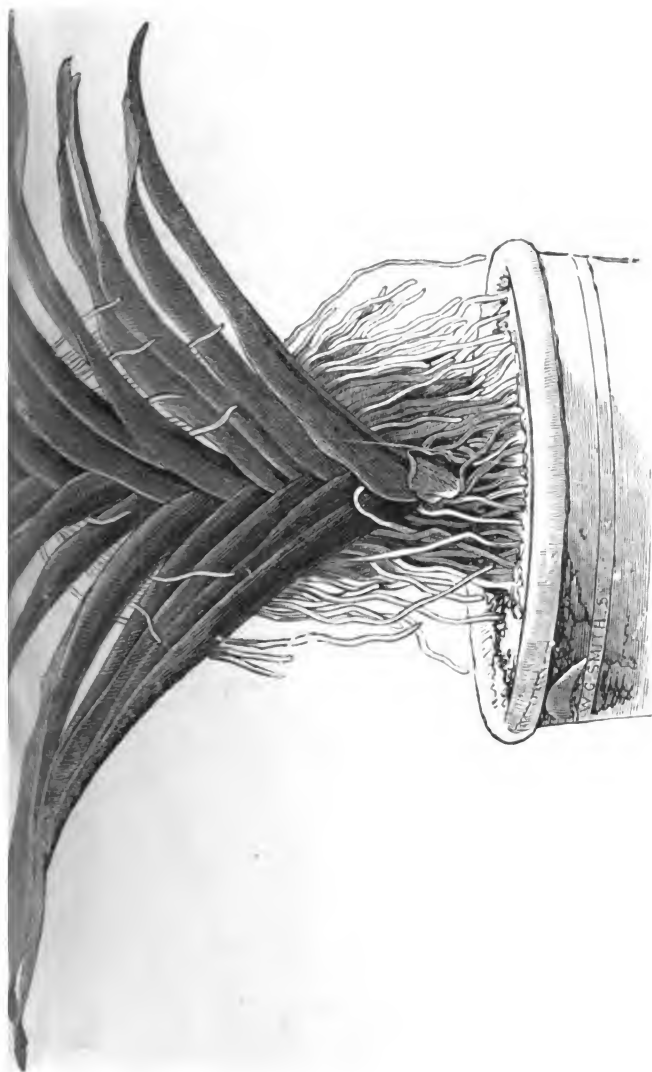
FIG.—*Orchid Album*, iv. t. 162.

A. CAUDATUM, *Lindley*.—A singular and free-flowering species of very compact growth, with pale green drooping lorate, channelled, emarginate leaves, ten inches long, and long flexuose racemes, a foot or more in length, of greenish-yellow flowers, tinted with brown, the labellum being pure white, obovate-cuneate with a long point, and furnished with a tail of pale olive-green colour, about nine inches long. We have sometimes seen twelve or more of these curious flowers on a spike; its season of blooming is from June to September, and it continues in perfection a long time. It is still, and always has been, a rare plant.—*Sierra Leone*.

FIG.—*Bot. Reg.*, t. 1844; *Bot. Mag.*, t. 4370; *L'Orchidophile*, 1887, p. 80; *Reichenbachia*, ii. t. 67; *Orchid Album*, viii. t. 358; *Veitch's Man. Orch. Pl.*, vii., opposite p. 124; *The Garden*, 1891, xxxix. p. 436.

A. CHALLUANUM, *Hook f.*—This is a very distinct and rare plant, interesting like its congeners, because of the tail-like spurs with which the flowers are furnished. The leaves are leathery, ligulate, blunt and very unequally blotched at the apex, six or eight inches long, one or two broad, dark green. The flowers





ANGRAECUM EBURNEUM.
(From the *Gardeners' Chronicle*.)

are white, produced about a dozen together in pendulous racemes during August and September, they have narrow sepals, petals, and lip, and a yellowish green spur, three to four inches long. It succeeds best grown on a block of wood with a little moss.—*Gaboon, West Africa*.

FIG.—*Bot. Mag.*, t. 5389; *Journ. of Hort.*, xix. 1889, p. 269, fig. 35; *Orchid Album*, x. t. 440.

A. CITRATUM, *Thouars*.—A beautiful and free-flowering dwarf species, admirably adapted for basket culture. It has a very short stem, smooth, broad, bright green, close-set oblong-lanceolate leaves, and slender pendulous racemes of small but pretty flowers of a pale yellowish white, closely and evenly set in two rows along the rachis. It is a compact-growing plant, and until within the last few years was extremely rare.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 5624; *Lindenia*, v. t. 238; *L'Illustration Horticole*, xxxiii. t. 592; *Orchid Album*, vii. t. 300; *Veitch's Man. Orch. Pl.*, vii, opposite p. 125.

A. CRENATUM, *Rchb. f.*—This is a very rare plant, and quite distinct. The flowers resemble those of *A. Chailluanum* in colour and shape, but are much smaller, as is also the growth of the plant; it flowers in June and July.—*West Africa*.

A. CRYPTODON, *Rchb. f.*—A distinct species, comparable in regard to habit and foliage with *A. Chailluanum*, and in its flowers, which are white and borne in lax racemes, is equal to *A. Ellisii*. The latter have ligulate acute petals, a lanceolate lip, and a filiform spur three times as long as the stalked ovaries, which together with the base of the spur are reddish-white, the rest of the spur being white.—*Madagascar*.

A. DESCENDENS, *Rchb. f.*—A fine species which comes near *A. Ellisii*, but differs in its oblong-ligulate leaves being obscurely bilobed at the apex, its stronger spur which is more than four times longer than the pedicels, its cuneate ovate acuminate lip, and its shorter hairy column. The flowers, which are white, are produced on a drooping many-flowered raceme.—*Madagascar*.

A. EBURNEUM, *Thouars*.—A strong-growing free-flowering Orchid of noble aspect, with densely packed, broadly ligulate obliquely bilobed distichous leaves, which are eighteen inches long, leathery in texture, and of a light green colour. The flowers, which have green sepals and petals and spur, and a broad cordate cuspidate lip of ivory whiteness, are produced on upright racemes eighteen inches long; it blooms during the winter months, and if kept free from damp will last five or six weeks in perfection, on which account it becomes very valuable.—*Bourbon, Madagascar*.

FIG.—*Bot. Reg.*, t. 1522; *Bot. Mag.*, t. 4761; *Past. Mag. Bot.*, xvi. 90 (woodcut); *Gard. Chron.*, 1873, p. 217, fig. 46; *Thouars Orch. Afr.*, tt. 62-64; *Batem. 2nd Cent. Orch. Pl.*, t. 111; *Orchid Album*, i., t. 41.

SYN.—*A. superbum*, *Thouars*—*Rchb. f.*, *Linodorum eburneum*; *Bory. Voy. i.*, t. 19.

A. EBURNEUM SUPERBUM, *Hort.*—A fine variety of *A. eburneum*, brought home by the late Rev. W. Ellis, of Hoddesdon. It is stronger in growth than the type, and the flowers, which are ivory white, and very large, open about the same time as those of *A. eburneum*, and continue a long time in beauty.—*Madagascar*.

FIG.—*L'Orchidophile*, 1885, p. 163.

A. EBURNEUM VIRENS, *Hook.*—A free-flowering variety, the flower spikes of which are not so stiff, and are therefore more graceful, than those of *A. eburneum*. The plant has dark green foliage, about ten inches long, and the blossoms have green sepals, petals, and spur, with the cordiform cuspidate lip white, greenish down the centre; they are smaller than those of *A. eburneum* itself, and are in perfection during December and January.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 5170; *Pest. Fl. Gard.*, i. 25, figs. 9, 10; *L'Orchidophile*, 1884, i. p. 72.

SYN.—*A. virens*; *A. eburneum*, *Thouars*—f. *Rchb.* *A. Brongniartianum* (*Pescatorea*, t. 16) is, perhaps, the same plant.

A. EICHLERIANUM, *Kranzlin*.—A well-marked plant related to *A. infundibuliforme*. It has tall leafy stems, furnished with elliptic obliquely obtuse leaves, and bears large solitary flowers, the sepals and petals of which are lance-shaped, light green, and the large helmet-shaped obcordate lip is white, with a triangular apiculus in the notch, and an erect conical spur, as long as the sepals.—*Loango, W. Africa*.

FIG.—*Garten-Zeitung*, 1882, 434, fig. 102.

A. ELLISII, *Williams*.—This beautiful species was introduced to this country by the late Rev. W. Ellis, whose name it bears, and is undoubtedly one of the finest species we have in cultivation. The leaves are distinctly arranged in a distichous manner, and about ten inches in length, broadly ligulate, dark green on the upper side, paler below, and deeply and unequally bilobed at the apex. The flowers grow in arching racemes two feet long, bearing from eighteen to twenty-four flowers, pure white and very fragrant, the sepals and petals reflexed, and the spur of the lip of a light cinnamon colour and six inches long. The profile of the flower is an exact resemblance of a cockatoo. It requires the temperature of the East Indian house.—*Madagascar*.

FIG.—*Floral Mag.*, N.S. t. 191; *Gard. Chron.*, N.S. iii. 277, fig. 54; *Lindenia*, ii. t. 92; *Warner's Sel. Orch. Pl.*, iii. t. 26.

A. FALCATUM, *Lindley*.—This is a very elegant compact-growing species, with narrow dark-green leaves; the flowers are freely produced, very fragrant, pure white, and furnished with a very long spur. This species requires exceptional treatment as to heat, since it succeeds in a much lower temperature than the other *Angraecums*.—*Japan*.

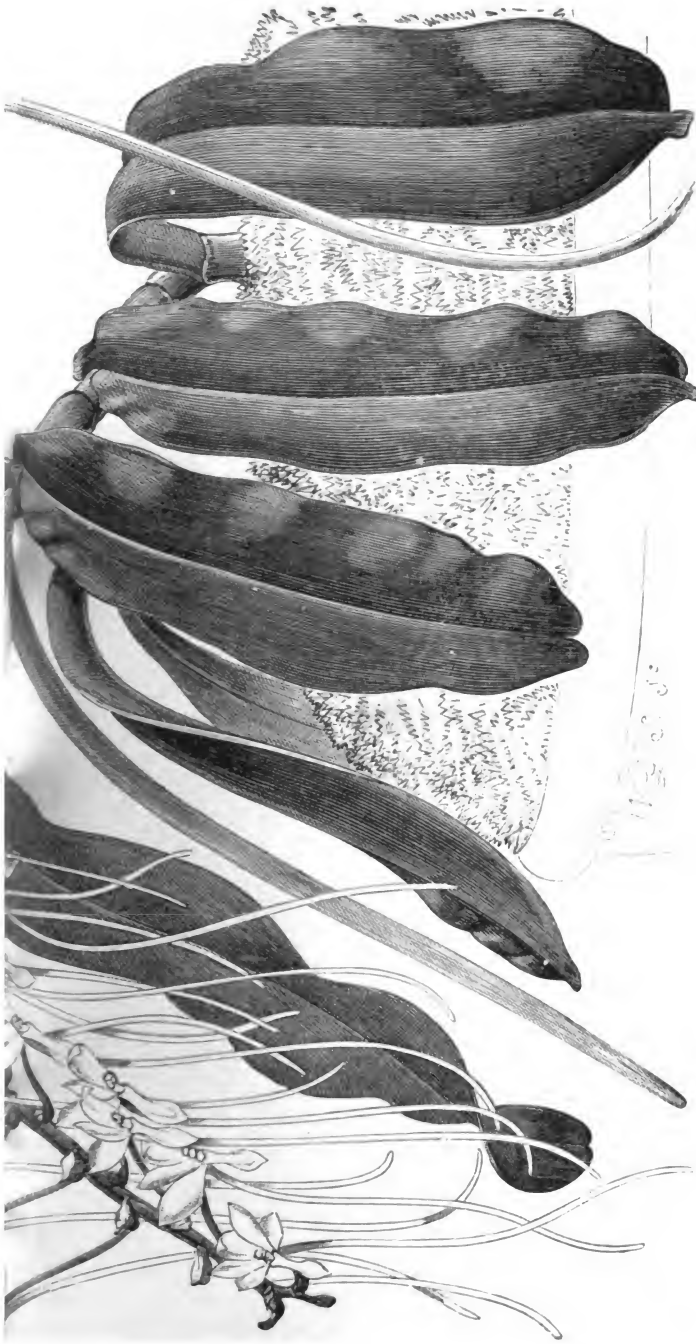
FIG.—*Bot. Mag.*, t. 2097.

SYN.—*Oecoclades falcata*.

A. FASTUOSUM, *Rchb. f.*—A fine new species very distinct in character, with cuneate-oblong leaves, three inches broad, blunt and unequally lobed at the end, very rugose on the surface, and with a cartilaginous margin; the flowers are numerous, in racemes, equalling those of *A. caudatum*, of a fine ivory white, with ligulate-oblong sepals and petals, an obovate lip, and a filiform spur two to three inches long. The flowers have the fragrance of tuberoses.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 7204; *Gard. Chron.*, N.S., 1885, xxiii. p. 533, fig. 96; *Veitch's Man. Orch. Pl.*, vii. p. 130; *Journ. Hort.*, xxiv. 1892, p. 311, f. 53.





ANGRAECUM ELLISII.
(From the *Gardener's Chronicle*.)



ANGRAECUM KOTSCHYI.
(From Messrs. J. Veitch & Sons' Catalogue.)

A. FRAGRANS, *Thouars*.—The leaves of this species in the dry state are said to have an odour similar to *Vanilla*, and to be used medicinally, leaves lorate three to four inches long by about three-quarters of an inch wide, flowers solitary about two inches across, white and fragrant.—*Mauritius, Bourbon*.

FIG.—*Thouars' Orch. Africa*, t. 54; *Bot. Mag.*, t. 7161.

A. FUSCATUM, *Rehb. f.*—A handsome and distinct plant, having cuneate-oblong leaves, blunt and unequally bilobed at the tip, and many-flowered lax racemes of blossoms, of which the peduncles, ovaries, and bracts are cinnamon-coloured; the flowers, which are nearly equal to those of *A. caudatum*, have ochre-coloured sepals, white petals and lip, and a brown filiform flexuose spur more than twice as long as the ovaries.—*Madagascar*.

FIG.—*Garten flora*, 1886, t. 1234.

A. GRANTII.—See *ANGRAECUM KOTSCHYI*.

A. GERMINYANUM, *Hort. Sander*.—This beautiful species was discovered by M. Leon Humblot, together with *Phajus tuberculosus* and *P. Humbloti* in 1886, and flowered for the first time at Kew, in May, 1888. The flowers are pure white, solitary on short stalks; sepals 2½-3 inches long, sepals somewhat shorter; lip quadrate 1 inch broad and nearly as long; anterior margin contracted in the middle into a recurved thread-like tail, 1 inch long. Named in honour of M. le Comte A. de Germiny, of Gouville, near Rouen, who owns one of the finest collections of Orchids in France.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 7061.

A. HILDEBRANDTII, *Rehb. f.*—An elegant but very small-growing plant with ligulate unequally bilobed leaves and spreading lax racemes of yellow-orange flowers, having an oblong-acute lip and a filiform clavate spur shorter than the ovary.—*Comoro Isles*.

A. HYALOIDES, *Rehb. fil.*—A striking and pretty little species with star-shaped white flowers, which are produced in great profusion 12 to 15 on a spike.—*Madagascar*.

FIG.—*L'Orchidophile*, 1889, p. 347; *Xenia Orchidacea*, iii. t. 238.

A. KOTSCHYI, *Rehb. f.*—One of the most distinct of the newer *Angraecums*, and one of small dimensions, flowering while young. It has broad polymorphous spatulate, unequally bilobed leathery leaves of a dark shining green; and the flowers, which are produced in many-flowered pendulous racemes, are creamy white, each with a pandurate lip, and a remarkable spirally-twisted reddish spur several inches in length. It flowers in October.—*Tropical Africa*.

FIG.—*Gard. Chron.*, N.S., xiv. 456; *Id.*, 693-4, fig. 131; *L'Orchidophile*, 1883. p. 796; *Orchid Album*, iv. t. 379; *Veitch's Man. Orch. Pl.*, vii. opposite p. 132.

SYN.—*A. Grantii*.

A. LEONIS.—See *AÆRANTHUS LEONIS*.

A. MODESTUM, *Hook f.*—A pretty small-growing species in the way of *A. apiculatum* and *A. bilobum*, with elliptic-oblong subacute leaves, and pendulous

racemes bearing pretty flowers, 12 to 15 in number, which are pure white, remarkable for their slightly hairy column, and having the rachis and pedicels pale brown instead of green.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 6693; *Revue Hort. Belge*, 1889, p. 217; *Journ. Hort.* xvi., 1887, p. 175, f. 24; xxi. 1890, p. 489, f. 65 *Revue horticole*, 1888, p. 516 (plate) (*A. Sanderianum*).

SYN.—*A. Sanderianum*.

A. PELLUCIDUM, *Lindley*.—A bold-habited plant, making distichous tufts of bright green shining oblong leaves a foot to a foot and a half in length, and producing long spikes of small white flowers which "are as delicate and transparent as if they were flakes of snow fixed by frost in the very act of melting," each part of the lip being studded and bordered with little crystalline elevations, and the whole fabric of the blossoms as fragile as a thin plate of glass; it blooms in winter, which makes it an acquisition at that dull season. It requires to be kept in a warm house, and makes a good basket or block plant, being in growth very much like a *Phalaenopsis*.—*Sierra Leone*.

FIG.—*Bot. Reg.*, 1844, t. 2.

SYN.—*Listrostachys pellucida*.

A. PERTUSUM, *Lindley*.—This is a very distinct and pretty species, seldom to be found, however, in collections. It somewhat resembles an *Aërides* in its growth. The distichous leaves are lorate, with an obliquely bilobed apex, rather narrow, channelled above, fleshy and dark green. The spike is pendulous, longer than the leaves, secund, densely packed with white flowers, which have a short pale yellowish spur about as long as the lip; it blooms during the late autumn and winter months.—*Sierra Leone*.

FIG.—*Bot. Mag.*, t. 4782.

SYN.—*Listrostachys pertusa*.

A. PRIMULINUM, *Reclfe*.—A supposed natural hybrid between *A. hyaloides* and *A. citratum* from Madagascar, which was flowered by Messrs. H. Low and Co. The flowers are smaller and more crowded than those of *A. citratum*. Sepals and petals of a pale primrose colour; lip pure white.—*Madagascar*.

A. SANDERIANUM.—See *ANGRAECUM MODESTUM*.

A. SCOTTIANUM, *Rehb. f.*—A very distinct and pretty species, which has been introduced to this country by Sir John Kirk, and has been flowered by the late Mr. Scott, of Walthamstow, after whom it is named. It has a terete elongated rooting stem, and is the only *Angraecum* as far as we know with terete leaves, which are subdistichous, semi-cylindrical, and subacute. The flowers are produced from the axils of the leaves on one or two flowered peduncles, sometimes as long as the leaves, and are large pure white, in shape similar to those of *A. eburneum*, but rounded and abruptly mucronate at the apex of the lip, the slender tapering spur six inches long and of a pale brownish yellow colour; it flowers in June and July.—*Comoro Isles*.

FIG.—*Bot. Mag.*, t. 6723; *Gard. Chron.*, n.s., xiv. 137, fig. 30; *Flor. Mag.*, n.s., t. 421; *L'Orchidophile*, 1886, p. 387; *Xenia Orch.*, iii. t. 239.



ANGRAECUM SESQUIPEDALE.
(From the *Gardener's Chronicle*.)

A. SESQUIPEDALE, *Thouars*.—A wonderful and noble plant of great beauty, and certainly the finest species of the genus yet discovered. It was brought to England by the late Rev. W. Ellis, of Hoddesdon, from Madagascar, where he found it growing on trees. The stem is simple and rooting; the leaves close-set, distichous, leathery, oblong, blunt and bilobed at the apex, keeled, and of a dark green colour. The flowers are of a clear ivory white, and very large, a foot across, with a greenish tail or spur from twelve to eighteen inches in length hanging from the flower. The peduncles are axillary and bear from one to four of these fragrant gigantic flowers, which are produced in November, December, and January, and last about three weeks in beauty. There are two varieties of this species, one having larger flowers than the other and blooming later in the season.



ANGRAECUM SESQUIPEDALE.

FIG.—*Bot. Mag.*, t. 5113; *Gard. Chron.*, 1857, 253 (woodcut); *Id.* 1873, 255 (woodcut); *Illust. Hort.*, xiii. t. 475; *Flore des Serres*, tt. 1413—14; *Warner, Sel. Orch. Pl.*, i. t. 31; *Jennings, Orchids*, t. 3; *Veitch's Man. Orch. Pl.*, vii. opp site p. 138.

SYN.—*Aëranthus sesquipedalis*.

A. SUPERBUM.—See *ANGRAECUM EBURNEUM*.

A. VIRENS.—See *ANGRAECUM EBURNEUM VIRENS*.

ANGULOA, *Ruiz et Pavon*.

(Tribe Vandaeae, subtribe Cyrtopodieae.)

These are stately plants with large pseudobulbs about eight inches high, and broad plicate leaves a foot or more long; their flower-scapes are about twelve inches high, and issue from the base of the bulbs just as they begin to grow. The flowers are large and beautiful, with thick fleshy connivent sepals, which often give them a subglobular outline, but though remarkably showy, they have no pretence to the graceful beauty which is the charm of most Orchids; theirs, on the contrary, is a solid, massive beauty, which is very effective in contrast with other types. The plants make good subjects for exhibition, especially *A. Clowesii* and *A. Ruckeri*, which are all the more valuable from the colour of their flowers, being somewhat different from that of most Orchids. The flowers have some fancied resemblance to a bull's head, whence in its native home it is called *El Torito*. There are several recognised species, natives of the Andes of Colombia and Peru.

Culture.—These plants are all best grown in pots, with rough fibrous peat, good drainage, and plenty of moisture at the roots in the growing season. The cool-house is the most suitable place for them, as they succeed best in a cool temperature. They ought to have a good season of rest, and during this time they should be kept rather dry, till they begin to show signs of growth. They are propagated by dividing the pseudobulbs just before they begin to grow.



ANGULOA CLOWESII.

A. CLOWESII, *Lindley*. — A charming distinct and free-growing species resembling in the shape of its flower a large Tulip. The sepals and petals are bright yellow, the lip pure white or yellow tipped with orange; it blooms in May, June, and July, and lasts long in perfection if kept in a cool-house. The lip of this plant is very remarkable, being beautifully balanced on a kind of hinge, so that the flower when shaken produces a rattling sound caused by the lip striking the sepals; the lip is three-lobed,

the middle lobe pilose, infundibuliform-labiate, and tridentate. The flowers are fragrant.—*Colombia*.

FIG.—*Bot. Reg.*, 1844, t. 63; *Bot. Mag.*, t. 4313 (orange-lipped var.); *Warner, Sel. Orch. Pl.*, i. t. 33; *Pescatorea*, t. 17; *Moore, Ill. Orch. Pl.*, *Anguloa*, t. 2; *Lindenia* iv. t. 191; *Veitch's Man. Orch. Pl.*, ix. opposite p. 100.

A. CLOWESII MACRANTHA, *Hort.*—A fine variety with larger flowers, growing about the same height as the preceding. The flowers, which are bright yellow spotted with red, are produced in July, and, if kept dry, continue three or four weeks in perfection. A scarce plant.—*Colombia*.

A. DUBIA, *Rehb. f.*—A very distinct novelty, with flowers resembling those of *A. uniflora* in shape, but being of the colour of those of *A. Clowesii*—yellow, the sepals and petals covered inside with small purple spots; the lip is white, with purple blotches inside at the base. The flowers are produced in May and June. Professor Reichenbach says this plant may be a hybrid between *A. uniflora* and *A. Clowesii*; it resembles the latter in growth, and was introduced by us along with it.—*Colombia*.

A. EBURNEA, *Williams*.—A magnificent species, which will make a valuable addition to our cool-house Orchids. It has large dark-coloured bulbs, with bright green leaves, a foot and a half high, producing flowers as large as those of *A. Clowesii*, but of the purest white, except the lip, which is spotted with pink. This is a very rare plant.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 133; *Lindenia*, vii. t. 348.

A. HOHENLOHII.—See *ANGULOA RUCKERI SANGUINEA*.

A. INTERMEDIA.—See *ANGULOA MEDIA*.

A. MEDIA, *Rehb. f.*—An interesting addition to the genus, being a hybrid supposed to have been obtained by the crossing of *A. Clowesii* and *A. Ruckeri*. The sepals and petals are orange yellow outside, brownish purple within, the lateral sepals having a central line of orange, and much orange at the base. The lip has the side lobes reddish brown, with the disk ochre-coloured, and the anterior lobe short as in *A. Clowesii*. Raised by J. C. Bowring, Esq., Windsor Forest.—*Garden hybrid*.

SYN.—*A. intermedia*, *Rolfe*.

A. PURPUREA.—See *ANGULOA RUCKERI SANGUINEA*.

A. RUCKERI, *Lindley*.—A handsome Orchid of bold habit, with large plicate leaves and rich dark flowers, of which the sepals and petals have crimson spots on a yellow ground, and the lip is deep crimson. It flowers in June and July, and lasts two or three weeks in good condition.—*Colombia*.

FIG.—*Bot. Reg.*, 1846, t. 41; *Moore, Ill. Orch. Pl.*, Anguloa, t. 8; *Warner, Sel. Orch. Pl.*, ii. t. 10.

A. RUCKERI RETUSA, *Rehb. f.*—A remarkable variety, with the flowers lemon-yellow outside, covered with dark purple blotches within; the lip has its side lobes abrupt and rectangular, and its middle lobe small, reflexed and hairy.—*Colombia*.

A. RUCKERI SANGUINEA, *Lindley*.—This very fine variety is precisely like the type in regard to its habit, but the flowers are of a deep rich blood colour; it is very rare in cultivation.—*Colombia*.

FIG.—*Bot. Mag.*, t. 5384; *Bateman, 2nd Cent. Orch. Pl.*, t. 144; *Orchid Album*, i. t. 19; ? *Gartenflora*, t. 106; *Belg. Hort.*, iii. t. 31; *Ill. Hort.*, 3 ser., t. 427.

SYN.—*A. purpurea*; *A. Hohenlohii*; ? *A. Ruckeri Wagneri*.

A. RUCKERI WAGNERI.—See *ANGULOA RUCKERI SANGUINEA*.

A. SUPERBA.—See *PERISTERIA HUMBOLDTII*.

A. TURNERI, *Williams*.—This is a most beautiful and distinct species. The flowers are of a pretty pink, and are densely spotted on the interior both of the sepals and petals with bright rose colour. It flowers in May and June.—*Colombia*.

A. UNIFLORA, *Ruiz et Paxson*.—A well-marked and pleasing species, which blossoms very freely. The flowers are smaller than those of *A. eburnea*, and are white, produced in June and July, lasting two or three weeks in a perfect condition. In this species the lip is smooth.—*Peru, Colombia*.

FIG.—*Bot. Reg.* 1844, t. 60; *Bot. Mag.*, t. 4807; *Fl. Peruv. Prod.*, 118, t. 26; *Bateman, 2nd Cent. Orch. Pl.*, t. 159; *Moore, Ill. Orch. Pl.*, Anguloa, t. 1; *Gartenflora*, t. 1137; *Lindenia*, iii. t. 100.

A. UNIFLORA TREYERANI, Rolfe.—This new variety differs from the type in having transverse bars of rose colour at the base of the lip.—*Peru, Colombia*.

FIG.—*Lindenia*, vii. t. 310.

A. VIRGINALIS, Linden.—A rare and pretty species, which grows about a foot high, and has dark green bulbs; the blossoms, which are white, are spotted all over with dark brown; they are produced in June and July, and last three weeks in bloom.—*Colombia*.

ANOECTOCHILUS, Blume.

(Tribe Neottieae, subtribe Spirantheae.)

These charming little tropical Orchids are peculiar in habit, having neither erect stems, nor pseudobulbs, nor acaulescent crowns, but having instead small fleshy stems or rhizomes, which creep on the mossy surface of the soil, producing at intervals ovate or ovate-lanceolate leaves, and rooting from the joints where the leaves are produced. Their beauty consists in the metallic reticulations which cover their leaf-surface, and not in their flowers, which are small and grow in erect spikes from a few inches to a foot in height; they have their dorsal sepal connivent with the petals into a kind of helmet, and the lip extended behind into a spur and having a fimbriated claw and a two-lobed limb. The name is sometimes written *Anaectochilus*, but Blume writes it as we have adopted above; he has in some of his works called the genus *Anecochilus*, and in others *Anectochilus*. The species, which Bentham and Hooker set down as about eight in number, are found in India and the Malayan Archipelago. In the following pages we have noted the various forms of *Anoectochili* we have met with in cultivation.

Culture.—The genus *Anoectochilus* is one of the most remarkable of the class of variegated Orchids, and to its cultivation, which is not generally well understood, we will now address ourselves. All the varieties are remarkable for their dwarf compact habit, perfect form, and great beauty: they vary in height from two to six inches, and their leaves, which are well defined, vary from two to five inches in length, including the stalks, which, like the stems, are short and fleshy. The foliage of all the species is singularly rich and beautiful. In some it resembles the richest olive or purple velvet, regularly traversed with a network of golden lines. In others the leaf is of the most lively green, covered with silver tracery.

As regards cultivation, the plants require sand and peat mixed with moss. The white sandy ground from which they spring should be enlivened occasionally by small growths of moss, which sets off the plants to much advantage, especially when looked at through a bell-glass, under which the delicacy, richness, and softness of their appearance are increased. Few visitors walk through a house containing any of these plants without bestowing on them more than ordinary attention, and expressing admiration of their beauty.

The whole of the species require treatment very different from that given to any other Orchids, and different growers operate in different ways, but we have not found any mode of management to succeed better than the one first laid down by us many years ago, and which is being followed by many who have *Anoectochili* growing in great perfection. They are certainly difficult to cultivate, and many fail with them—a circumstance we attribute to their being kept too close. The glass case in which they are grown should always have a little air, by tilting or opening the glass about one or two inches; this will benefit them very much, and make them more vigorous, for when too much confined in the case or bell-glass, they grow up spindly and damp off in the stem; the latter, being fleshy, requires more substance and hardihood. We have seen *Anoectochili* grown in bottom heat, which we find to be injurious; they succeed in it for a time, but not long; they grow too fast, and become so weak as often to die altogether. Some few plants which we once had in bottom heat we removed to a cooler house without it, and under cooler treatment they improved very rapidly.

The finest collection we ever saw was under the care of the late Mr. Toll, when gardener to the late J. A. Turner, Esq., of Manchester. The plants were grown under bell-glasses in the stove, but no bottom heat was applied. Mr. Turner purchased a plant of each kind from us some years ago; these had been grown and propagated, and he had large pots full of them, many plants of a kind being placed together. This shows how well they may be grown without bottom heat. We have also seen them doing well in other places without bottom heat; in short, they may be grown without having an Orchid house at all—any common stove will do, or even a well-heated pit. We have frequently sold collections to gentlemen who have no other Orchids, but who have bought these for the express purpose of growing them for the decoration of the dinner-table,

on which they have a beautiful appearance by artificial light. As the taste for table decoration is increasing, plants such as these will doubtless be more sought after for that purpose; and the subjecting of them to exposure for a few hours in a warm room will do them little harm, provided they have glasses over them with a ventilator at the top to let out moisture, so as to keep the leaves dry. As they are generally grown in small pots, they can be plunged in handsome vases with ornamental glass tops, and when done with, taken back into the heat. For room work let the foliage be dry, and there should not be much moisture at the roots. We should not, however, advise them to be used in the way just described on a frosty night; but during mild weather it will not do them any more harm than taking them to a flower show. It was for years our custom, when living with the late C. B. Warner, Esq., at Hoddesdon, to show *Anoectochili* at the Regent's Park and Chiswick exhibitions under bell-glasses, and we never found them injured by any such changes. We, however, always took care to prepare them before starting, by not giving them too much water, and by putting them in a cooler house, which should be done with all plants of a tender kind before they are taken to a show; they will seldom sustain injury if treated in a proper way before leaving a warm house. The plants in question were shown for several years, and were grown without bottom heat and under bell-glasses in the shade. We mention this to show how many years *Anoectochili* may be grown on, when subjected to the treatment best suited for them.

When they get out of health we have found that the best way is to turn them out of their pots and examine the roots; if in a bad state below, wash the stem and roots, and repot in fresh soil. Thus treated we have known them to improve and do well for some time, provided they have not been allowed to get too much out of order before being seen to; if so, there may be little hope that the care bestowed on them will be of any use. These plants, unlike some Orchids, have no thick woody pseudobulbs to support them; their small fleshy stems require constant attention to keep them in a thriving state, but with care they may be grown to perfection. The flowers are small and unattractive, and their development often injures the plants by weakening them, on which account we always pinch them off when they appear, and find that this induces the stems to make lateral shoots freely.

These plants require to be grown in a warm house or pit, where the temperature ranges, in winter, by night from 55° to 60° (a few degrees higher would not do them any harm), while the warmth may rise to 65° by day, and by sun heat to 70° ; during March, April, and May the night temperature may range from 60° to 70° , and afterwards a few degrees higher will not be injurious. From March to October is the best time for growth, during which they will require a good supply of moisture at their roots; in fact, they should never be allowed to get dry, for then they will most likely perish; but from October to March they should only have sufficient water to keep the soil damp. They succeed best under bell-glasses, or in a glass case, with a little air always on to keep the atmosphere fresh and sweet. Some will do without glasses, if in a warm shady close house. We grow them in sphagnum, chopped into small pieces, with a little good fibrous peat and silver sand, all well mixed together. Clean river sand will, however, answer the same purpose, if they are provided with good drainage.

These plants do not require large pots, as they make but little root, but they succeed well in small pots; and if bell-glasses are used, the small pot may be plunged into a larger one, so that the bell-glass may fit the outer one. If grown in cases, put them in small pots, and arrange them in the case by placing good drainage at the bottom and sphagnum on the top of the drainage, with some sand on the top of the moss to set the pots on; then arrange the kinds in the case so that the contrast of the different colours may have a good effect. The pots should be perfectly clean, with thorough drainage at the bottom, and should be covered with a little moss, and filled up with the material recommended. In placing the roots in the pots, raise the stem a little above the rim. Established plants may be repotted once a year, and the end of February or the beginning of March will be found the best time for doing this. The glass or case in which they grow should be kept perfectly clean, in order that they may have plenty of light, but no sun, the sun's rays being injurious to them.

They are propagated by cutting the plants into pieces just below the first joint, and so as to have a root attached to each piece. For this purpose strong plants should be selected, and, in cutting, care must be taken that the bottom piece has two eyes, one to root from, and the other to push into a shoot; place them in small pots in the material

already named. The "bottom," or plant which has been cut, should be put under a bell-glass, or placed in the case, where it will soon throw up a young shoot, which is best left on till well rooted, and may then be cut off the old plant, and treated like the portion first removed, leaving behind the old part, which will throw up again and form another plant from the bottom eye.

The *Anoetochili* are attacked by different kinds of insects. Red spider is very destructive to them, and, if allowed to increase, soon spoils the foliage, but if constantly looked after it may be kept in check. Upon the first symptoms of the appearance of this marauder, take the plants out of the case, and examine the under sides of the leaves, and rub them over with a sponge. It is not advisable, however, to do this except there is really a necessity for it. The thrips is another enemy which must be kept under in the same way, or by steaming or fumigation, taking the glasses off for a short time. Cockroaches, too, should not be allowed to get near them, or they will work great mischief by eating the young stems; they must be sought after by candle-light, or killed by placing some of Chase's beetle poison in different parts of the house. The latter is sold in boxes and should be laid down about twice a week till the cockroaches are destroyed. In smoking be careful not to give too strong a dose. The best way is to fumigate three times, with an interval of one night between each operation, till both thrips and spider are destroyed. If the plants are steamed, twice doing will suffice.

The same mode of treatment is suitable for the following genera, most of which are close allies of the present:—*Dossinia*, *Goodyera*, *Haemaria*, *Macodes*, *Microstylis*, *Monochilus*, and *Physurus*—which see.

A. ARGYRONEURUM, *Hort. Ang.*—This extremely pretty little plant has the ground colour of the leaves light green, mottled with a darker hue, and the veins form a beautiful silvery network.—*Java*.

SYN.—*A. Lobbii*, *Hort.*, non *A. Lobbianus*, *Planchon*.

A. BOYLEI, *Hort. Williams.*—A very beautiful and distinct species allied to *A. regale*. The leaves are ovate-acuminate, two inches long by two inches broad, olive green, netted and pencilled over the entire surface with gold.—*India*.

A. BULLENII, *Hort. Low.*—This charming species grows six inches high, and has ovate-lanceolate leaves two and a half inches in length, the ground colour a dark bronzy green, marked through the entire length with three broad distinct lines of coppery red, varying at times to golden stripes.—*West Borneo*.

A. CONCINNUM, *Hort. Bull.*—A distinct species having its leaves ovate acuminate, rounded at the base, of a dark olive-green colour, netted and striped with shining coppery red.—*Assam*.

A. DAYI.—See *DOSSINIA MARMORATA DAYI*.

A. DOMINII, *Hort. Veitch.*—A hybrid between *Goodyera discolor* and *Anoectochilus xanthophyllum* (*A. Friderici-Augusti*) possessing a fine vigorous constitution; the leaves are of a dark olive green, with a pale yellow coppery streak down the centre, the main ribs being marked by pale lines.—*Garden hybrid*.

A. ELDORADO, *Hort.*—A distinct species, and one which is very difficult to cultivate, requiring a good deal of care to keep it in a healthy condition. It appears to be of deciduous habit, and is often lost by being thrown away when supposed to be dead, whereas, if left, it would push up again. The foliage is dark green, with a small tracery of a lighter colour. This plant should not be allowed to get too dry at the roots when at rest; if so, it will die.—*Central America*.

A. FRIDERICI-AUGUSTI, *Rchb. f.*—A splendid and also a free-growing species, very distinct from any other in cultivation. It attains a height of five inches, and has leaves two and a half inches long and an inch and a half broad, the ground colour being a dark velvety green, with broad orange and green stripes down the centre, and covered with a beautiful golden network.—*Ceylon*.

SYN.—*A. xanthophyllum*.

A. HERIOTII, *Hort. Williams.*—This is a very strong-growing species, with leaves three and a half inches long and two and a half broad, of a dark mahogany colour, having reticulations of a golden hue and well defined, and with a shadow of network showing through the surface.—*India*.

A. HIEROGLYPHICUM, *Hort. Bull.*—This neat-growing and pretty species has small ovate-elliptic leaves of a dark green colour marked with silvery grey blotches, hieroglyphic-like in character.—*Assam*.

A. INTERMEDIUM, *Hort. Ang.*—A fine distinct species, and one of freer growth than some others. It grows three inches high, and has leaves two and a half inches long, one and a half inch broad, with a soft silky surface, the colour being dark olive, striped and veined with gold. This will do well without a glass, if in a warm house, and shaded from the sun.—*Ceylon*.



ANOECTOCHILUS INTERMEDIUM.

A. JAVANICUM, *Hort. Ang.*—A species of less interest than many others, but still worth cultivating on account of its distinctness of colour. It grows four inches in height, and has leaves about two inches long and one and a half inch broad, of a dark velvety olive-green ground colour, with blotches of a lighter green and faint golden reticulation, the under surface pinkish. The flower scape is a span high, bearing a spike of small pink flowers.—*Java*.

FIG.—*Blume, Orch. Arch. Ind.*, t. 31, fig. 3; *Belg. Hort.*, 1861, t. 18.

SYN.—*Argyrorchis javanica*.

A. LATIMACULATUM, *Hort. Ang.*—A distinct and free-growing kind, having dark green leaves with silvery markings; it will succeed well without the protection of a bell-glass in a warm moist atmosphere.—*Borneo*.

A. LINEATUS.—See *MONOCHILUS REGIUM*.

A. LOBBIANUM, *Planchon*.—See *ANOECTOCHILUS ROXBURGHII*.

A. LOBBII, *Hort.*—See *ANOECTOCHILUS ARGYRONEURUM*.

A. LOWII.—See *DOSSINIA MARMORATA*.

A. NEVILLIANUM, *Hort. Low.*—A distinct and pretty species, which grows about three inches high, and has oblong-ovate leaves an inch and a half long, of a rich dark velvety copper or bronzy hue, marked with two rows of oblong pallid blotches. It is a free grower.—*Borneo*.

A. PETOLA.—See *MACODES PETOLA*.

A. QUERCETICOLA.—See *PHYSURUS QUERCETICOLA*.

A. REGALE, *Blume*.—One of the handsomest species of the genus, and the one which has been longest in cultivation, having been for many years grown under the name of *A. setaceum*, which does not belong to it, the true *A. setaceum* of Blume having leaves of a velvety green, without the golden veins conspicuous in this plant, which in Ceylon is called Wana Rajah, equivalent to King of the Woods. It grows four inches high, and has roundish ovate leaves two inches long, and an inch and a half broad. The surface is of a beautiful velvety bronzy green, veined in regular lines, and covered with a network of gold. There are several varieties of this charming plant, all of which are free growers.—*Ceylon* and *Java*.

FIG.—*Bot. Mag.*, t. 4123; *Bot. Reg.*, t. 2010; *Flore des Serres*, t. 15; *Blume, Orch. Arch. Ind.*, tt. 12, 17; *Belg. Hort.*, 1861, t. 18.

SYN.—*A. setaceum*, Lindley et Hort., non Blume.

A. REGALE CORDATUM, *Hort.*—A rare and remarkably handsome variety, growing three inches high, and having leaves two inches long and an inch and a half broad; it resembles the former, but is rounder in the leaf, and the gold markings are broader.—*Java*.

SYN.—*A. setaceum cordatum*.

A. REGALE GRANDIFOLIUM, *Hort.*—A beautiful and very rare kind, growing two and a half inches high, and having leaves two inches long and an inch and a half broad. The foliage is light green, beautifully laced and banded with a network of gold.—*Java*.

SYN.—*A. setaceum grandifolium*.

A. REGALE INORNATUM, Moore.—A very distinct form of this handsome plant, the leaves of which are of the usual form, and of the same bronzy green colour, but are marked only by the longitudinal veins and are destitute of the golden reticulation. This dark rich velvety hue, with but few and slight markings, gives it a very distinct appearance.—*Java*.

FIG.—*Bot. Mag.*, t. 5203.

SYN.—*A. setaceum inornatum*.

A. REINWARDTII, Blume.—A very handsome species in the way of *A. regale*. The leaves are of a rich deep velvety bronze, beautifully and distinctly intersected with bright golden lines.—*Java*.

FIG.—Blume, *Orch. Arch. Ind.*, t. 12, fig. 2; *Belg. Hort.*, 1861, t. 18.

A. ROXBURGHII, Lindley.—A very beautiful and distinct free-growing species, attaining a height of three inches, and having ovate leaves two and a half inches long, and an inch and a half broad, the colour towards the margin being a dark olive or bronzy green, with coppery reticulations, and a broad band down the centre of pale bright green, reticulated with golden veins. The flowers are white and rather showy for the size of the plant, growing in erect spikes six to ten inches high. The name appears to have been applied to several different plants; and those known as *A. intermedium* and *A. setaceo-pictum* are sometimes included as varieties.—*Java, Singapore, and India*.

FIG.—Wallich, *Tent. Fl. Nep.*, t. 27; *Flore des Serres*, t. 519; Blume, *Orch. Arch. Ind.*, t. 12b, fig. 2; *Belg. Hort.*, 1861, t. 18.

SYN.—*A. Lobbianum*, Planchon; *Chrysobaphus Roxburghii*.

A. RUCKERI, Hort. Low.—This is a remarkably handsome species. The leaves are broadly ovate, with a bronzy green ground colour, marked with six rows of distinct silvery-grey spots running down the entire length of the leaves. It looks distinct from most others.—*Borneo*.

A. SETACEUM.—See ANOECTOCHILUS REGALE.

A. SETACEUM CORDATUM.—See ANOECTOCHILUS REGALE CORDATUM.

A. SETACEUM GRANDIFOLIUM.—See ANOECTOCHILUS REGALE GRANDIFOLIUM.

A. SETACEUM INORNATUM.—See ANOECTOCHILUS REGALE INORNATUM.

A. STRIATUM.—See MONOCHILUS REGIUM.

A. TURNERI, Hort. Williams.—This is one of the most beautiful of the genus, and possesses the advantage of being a strong and vigorous grower. The leaves are large, of a rich bronzy ground colour, freely marked with golden and coppery-red reticulations.—*Java*.

A. VEITCHII.—See MACODES PETOLA.

A. XANTHOPHYLLUM.—See ANOECTOCHILUS FRIDERICI-AUGUSTI.

A. ZEBRINUM, Hort. Bull.—An elegant dwarf-growing species, with ovate lanceolate leaves, of a deep olive green, striped with about three light copper-coloured lines.—*India*.

ANSELLIA, Lindley.*(Tribe Vandeeae, subtribe Cymbidieae.)*

Noble free-flowering epiphytal Orchids, growing about three feet high, and blooming in winter, when they produce large panicles of flowers, which, if kept in a cool house, last long in perfection. The flowers are characterised by subequal spreading sepals and petals, by the short column being wingless and produced at the base into a short broad two-lobed foot, and by the distichous-leaved stems terminating in a panicle of flowers. Some three or four species or well-marked varieties are known in Tropical Africa, extending to Natal.

Culture.—The best compost in which to grow these plants is rough fibrous peat, with a good addition of leaf-mould and sand, and good drainage.

**ANSELLIA AFRICANA.**

They require good-sized pots, as they root very freely, and are of easy culture, provided they get the heat of the East Indian house while growing, and a good supply of water at the roots. Care is, however, necessary in watering, for the young growths are apt to rot if water lies in the heart. All of them are propagated by dividing their stems after they have finished their growth, or just after they have done blooming.

A. AFRICANA, Lindley. — A free-flowering and noble evergreen Orchid, producing upright stems from three to four feet high, with light green five-ribbed leaves. The flowers are produced in January on drooping branching spikes from the apex of the stems, and have the yellow sepals and petals spotted all over with dark brown; lip yellow. We have seen upwards of a hundred flowers on one spike, and they keep in beauty for two months. This species was first found in Fernando Po, on the stem of a

palm-tree, by the late Mr. John Ansell, to whom the genus is dedicated.—*Sierra Leone*.

FIG.—*Bot. Reg.*, 1846, t. 30 ; *Bot. Mag.*, t. 4965 ; *Gartenflora*, t. 95 ; *Paxton, Mag. Bot.*, xiii. 241, with tab. ; *Orchid Album*, viii. t. 367.

A. AFRICANA GIGANTEA, *Rehb. f.*—A very fine variety, producing upright spikes from the top of the bulbs ; it flowers about the same time, and is of the same colour as the type only larger, lasting a long time in perfection ; very rare.—*Natal*.

A. AFRICANA LUTEA, *Rehb. f.*—A very distinct variety, resembling the others in appearance, but not so strong in growth, and producing clusters of smaller light yellow flowers from the top of the bulbs.—*Natal*.

FIG.—*Bot. Mag.*, t. 4965, fig. 3.

SYN.—*A. natalensis* ; *A. gigantea* (Hooker).

A. CONGOENSIS, *Rodegas*.—This species appears to be dwarfer in habit than *A. africana* ; sepals and petals yellow barred and spotted with chocolate brown ; lip three-lobed, side lobes white, barred with brown in the interior, mid-lobe yellow.—*Congo*.

FIG.—*Lindenia*, ii. t. 64.

A. GIGANTEA.—See *ANSELLIA AFRICANA LUTEA*.

A. NATALENSIS.—See *ANSELLIA AFRICANA LUTEA*.

ARACHNANTHE, *Blume*.

(Tribe Vandace, subtribe Sarcantheae.)

Epiphytal plants, with leafy stems, loose racemes of showy flowers, of which the sepals and petals are spreading, and an articulated lip, bearing a minute conical spur. The few species are found in the Malayan Archipelago. Benthams and Hooker include *Vanda Cathcartii* in this genus.

Culture.—This small genus of very curious and highly-interesting plants requires the same treatment as *Aërides* and *Angraecum*.

A. MOSCHIFERA, *Blume*.—A very peculiar and rare plant, somewhat like a *Renanthera* in habit. The flowers are large, creamy white, or lemon colour, with purple spots, and very much resemble a spider, from whence comes the generic name ; they are very delicately scented with musk, and continue in perfection a long time. The old spike should not be cut, as it continues to produce flowers from its point for a long time.—*Java*.

FIG.—*Blume, Rumphia*, iv. tt. 196, 199 ; *Blume, Bijdr.*, 365, t. 26.

SYN.—*Renanthera Arachnites* ; *R. Flos aëris* ; *Arachnis moschifera* ; *Epidendrum Flos aëris*.

A. CATHCARTII.—See *VANDA CATHCARTII*.

A. LOWII.—See *RENANTHERA LOWII*.

ARPOPHYLLUM, *Llave et Leazarza.*(Tribe ~~Vandeeae~~ ^{Epidendreae} ~~subtribe~~ Pleurothallideae.)

This genus of terrestrial Orchids has erect stout one-leaved stems, the leaf-sheath embracing the stem. The scapes or peduncles are terminal, and bear an erect spike of numerous small prettily-coloured flowers, the parts of which are concave and shell-like, with a broad column and eight pollen masses. There are some half-dozen species found in Mexico and Central America, and of these only three, with which we are acquainted, are worth growing. All three are of stately and handsome habit, with bold evergreen foliage, and beautiful upright spikes of flowers, charmingly arranged, looking not unlike rows of small highly-coloured shells clustering round the spike, which is a foot or more in length. *A. giganteum* makes a fine exhibition plant, and the colour is distinct from that of most Orchids.

Culture.—The species all require the heat of the Mexican house. They are best grown in pots, in peat with good drainage, as they require a liberal supply of water at the roots when growing, and to be placed as near the light as possible, care being taken not to give too much shade, as the more light they get the better they will bloom. They are propagated by division.

**ARPOPHYLLUM GIGANTEUM.**

A. CARDINALE, *Linden et Rehb. f.* —A very distinct species, with ensiform leaves two feet long, of a dark green, and glossy above. The flowers are produced in cylindrical racemes a foot long, and consist of light rose-coloured sepals and petals, and a deep rose red lip. It blooms during the summer months, and lasts three or four weeks in perfection.—*New Grenada.*

FIG.—*Pescatorea*, t. 45.

A. GIGANTEUM, *Lindley*.—A noble species, and certainly the finest of the genus, having dark evergreen, ensiform, drooping leaves, and a graceful habit

The flower spikes, which are produced from the top of the bulbs, grow from eight inches to a foot high; the blossoms are beautiful dark purple and rose; they are produced during April and May, and last three weeks in perfection. If required for exhibition this should be kept at the coolest end of the house, for it will generally come in too early if not kept back.—*Mexico*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 39.

A. SPICATUM, *Llave et Lex.*—A pretty evergreen Orchid, with arcuate keeled leaves, and an erect spike of dark red flowers, which continue in beauty three or four weeks during the winter months.—*Mexico*.

FIG.—*Bot. Mag.*, t. 6022.

ARUNDINA, *Blume.*

(Tribe Epidendreae, subtribe Coelogyneae.)

A genus of terrestrial Orchids, of considerable beauty. They have erect reed-like leafy stems invested by the leaf-sheaths, and terminal loose racemes of large showy flowers, in which the sepals are spreading and the lip sessile, spurless, concave at the base surrounding the column. The few species are found in India and the Malay Archipelago.

Culture.—They are free-growing and free-rooting Orchids, but having only thin reed-like stems, and no fleshy pseudobulbs to draw upon for support, they require to be potted in richer soil than many others. That best suited to them is good rough fibrous peat and loam mixed together. The plants should be grown in the cool end of the East Indian house, and must have a good supply of water during the growing season, the soil being also kept moderately moist when they are at rest. They need plenty of light, but require shading during strong sunshine. They are propagated by dividing the crowns, and also by taking off and potting the young plants produced on the stems.



ARUNDINA BAMBUSAEFOLIA.

A. BAMBUSAEFOLIA, *Lindley.*—A fine evergreen terrestrial Orchid, with reed-like stems, three to five feet high, producing its flowers from the top of

the stem about July, and continuing to bloom for some time during summer and autumn. The leaves are ensiform, pale green; and the flowers, which grow several together on a terminal spike, are large, with pale magenta rose sepals and petals and a rich rose lip striped with orange lines on each side of the white throat.—*India: Nepaul, Burmah, &c.*

FIG.—Griffith, *Not. Pl. Asiat.*, iii. t. 314; Wight, *Icon. Pl. Ind. Or.*, v. t. 1661; *Orchid Album*, iii. t. 139; *Gard. Chron.*, 3rd series, iv. 1888, p. 629, fig. 87.

SYN.—*Cymbidium bambusaefolium*; *Bletia graminifolia*.

A. Densa, Lindley.—An attractive species, with stems three feet high, clothed with lanceolate sub-equal stem-sheathing leaves, and bearing a close terminal head of handsome rosy-violet flowers, with a crimson-bordered lip; these flowers are as large as those of *A. bambusaefolia*, an dsweet-scented.—*Singapore*.

FIG.—*Bot. Reg.*, 1842, t. 38.

ASPASIA, Lindley.

(Tribe Vandeeae, subtribe Oncidieae.)

This is a small genus of epiphytes containing plants of dwarf habit. The pseudobulbs are broad and oval, and, like the leaves, dark green. The flowers are in racemes on axillary peduncles; the sepals are spreading, and at the back, with the petals, adnate to the base of the column, but not spurred. The few species are Tropical American. Reichenbach includes the genus in *Odontoglossum*.

Culture.—These plants require the same treatment as the *Miltonias*.

A. LUNATA SUPERBA, Hort.—This beautiful variety of an old acquaintance in our gardens bloomed some years ago with us, and proved to be very fine. The sepals and petals are long, white at the ends, and spotted with chocolate; the lip is rather large, subquadrate, white, with the centre deep violet. A compact-growing plant, well deserving a place in any collection.—*Brazil*.

FIG.—(*A. lunata*) *Xenia Orch.* i. t. 34; *Paxt. Fl. Gard.*, i. 108, fig. 74.

SYN.—(*A. lunata*) *Aspasia odorata*; *Odontoglossum lunatum*; *Miltonia odorata* Hort.

A. ODORATA.—See *A. LUNATA SUPERBA*.

BARKERIA, Knowles and Westcott.

(Tribe Epidendreae, subtribe Laeliace.)

These plants are now often included in the genus *Epidendrum*, but for the purposes of the cultivator it is more convenient to keep them separate. They have stems somewhat thickened and fleshy, or narrow fusiform pseudobulbs, leafy above; the column is connate with the base of the lip,

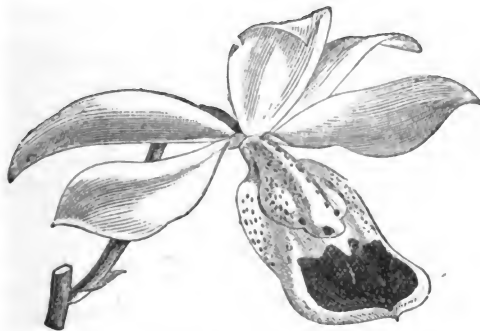
sometimes very shortly so, and more rarely for half its length. They are deciduous, losing their leaves during their season of rest, and, though small growing, are free in producing flowers, which are both rich and delicate in colour. The few species are from Central America and Mexico.

Culture.—The *Barkerias* merit a place in every collection. They are compact-growing, with upright slender bulbs, from the top of which the flower stems are produced. These plants succeed best on flat blocks of wood, so that the plants can be tied on the top without any moss; they send out their thick fleshy roots very freely, and will soon cling to the blocks. They require to be grown in a cool-house, where they can receive air every day during their season of growth. The Mexican house will be the most suitable place for them, and during their season of growth a good supply of water—twice a day in summer will not be too much for them, but during their season of rest very little water will suffice—only enough to keep their stems or bulbs from shrivelling, about two or three times a week. They should be suspended from the roof, near the glass, where they can receive plenty of light and a good supply of sun.

B. CYCLOTELLA, *Rehb. f.*—A very beautiful species with short leafy stems as thick as a quill, distichous ligulate-oblong acute leaves, and a terminal raceme of very showy flowers, which have deep magenta sepals and petals, and a broad emarginate lip of the same rich magenta round the margin, the central portion being white. It is a deciduous species, and blooms in February and March, the plant continuing for six weeks in bloom.—*Mexico*.

FIG.—*Orchid Album*, iv. t. 148.

B. ELEGANS, *Knowles and Westc.*—A handsome species, of which the leaves are lanceolate, and the erect racemes of flowers, few in number, are produced during the winter season. The sepals and petals are dark rose, the lip is whitish, broadly obovate, having on the disk an oblong callus ending in three elevated lines, this being covered by the large spatulate yellowish purple dotted column, beyond which in front is a large blotch of deep reddish crimson. It is one of the best of the genus, and rare, having



BARKERIA ELEGANS.
(From the *Gardeners' Chronicle*.)

flowers nearly as large as those of *B. spectabilis*. There are two or three varieties in cultivation.—*Mexico*.

FIG.—*K. & W. Floral Cab.*, t. 49; *Bot. Mag.*, t. 4784; *Fl. des Serres*, t. 959; *Illust. Hort.*, t. 23; *Pescatorea*, t. 10; *Floral Mag.*, 2 ser., t. 394; *Orchid Album*, v. t. 195; *Veitch's Man. Orch. Pl.*, vi. p. 96; *Journ. of Hort.*, xiii., 1886, p. 361, f. 54. *Garl. Chron.*, 3 ser., vii., 1890, p. 53, f. 11.

SYN.—*Epidendrum elegans*.

B. ELEGANS NOBILIOR, *Rehb. f.*—This variety first flowered with Sir T. Lawrence, Bart., Dorking, in 1886, and differs from the type in having much larger flowers and a nearly black purple spot on the lip.—*Mexico*.

B. LINDLEYANA, *Bateman*.—A very distinct and handsome species, with slender stems a foot high, having elliptic oblong acute leaves, and long erect racemes of rather large flowers, which are of a rosy purple colour, the lip, which is oblong-quadrate and apiculate, being rich purple at the tip, with a blotch of white in its centre; it blooms in September and October, and lasts long in good condition.—*Costa Rica*; *Mexico*.

FIG.—*Bateman, Orch. Mex. et Guat.*, t. 23; *Bot. Mag.*, t. 6098 *Parton Mag. Bot.*, xiii. 193, with tab.; *Jennings, Orch.*, t. 14.

SYN.—*Epidendrum Lindleyanum*.

B. LINDLEYANA CENTERAE, *Endr. et Rehb. f.*—A beautiful variety with longer pseudobulbs, and larger purple-lilac flowers, intensely purple at the tip, the disk yellowish white spotted with purple, the column lilac beautifully blotched with deep purple.—*Costa Rica*.

FIG.—*The Garden*, xxvii., 1885, p. 396; *Veitch's Man. Orch. Pl.*, vi. p. 103.

B. MELANOCAULON, *Rich. et Gal.*—A pretty and free-flowering Orchid. It has erect terete dark purple stems, and elliptic acute leaves; the flowers are produced on an upright spike, and have the sepals and petals rosy lilac, the lip reddish purple with a blotch of green in the centre. It produces its blossoms from June to September, and will continue in perfection a long time. A very rare and desirable species.—*Costa Rica*.

FIG.—*Rich. et Gal., Ann. Sc. Nat.*, 3rd ser., iii. 22, t. 19; *Ann. de Gand*, 1848, t. 212.

B. SKINNERI, *Bateman*.—A beautiful free-flowering Orchid, with erect stems a foot high, clothed with distichous lanceolate rather fleshy leaves, and bearing erect cylindrical racemes, six to nine inches long, of large deep rose-coloured blossoms. The flower spikes are sometimes two feet long, each bearing as many as from twenty to thirty flowers. It will continue in blossom from November to February, and is a valuable Orchid for winter blooming.—*Mexico*; *Guatemala*.

FIG.—*Bot. Mag.*, tt. 3951, 4094; *Bot. Reg.*, t. 1881; *Parton, Mag. Bot.*, xv. 1, with tab.; *Veitch's Man. Orch. Pl.*, vi. p. 118.

B. SKINNERI SUPERBA, *Hort.*—This far surpasses the type in the size of the flowers and of the raceme, as well as in the brilliancy of its colour; moreover, it frequently produces a branched inflorescence, no doubt from its stronger growth and constitution. The stems grow about a foot high, the flower spike proceeding from the top when the growth is nearly completed, and attaining

the height of from twelve to eighteen inches, bearing a large number of flowers of a dark rosy colour, somewhat deeper tinted in the lip, which is marked towards the base with yellow streaks.—*Guatemala*.

FIG.—*Floral Mag.*, t. 185 ; *Warner, Sel. Orch. Pl.*, i. t. 38.

B. SPECTABILIS, *Bateman*.—A charming species, having cylindrical stems four or five inches high, each bearing two fleshy lanceolate acute leaves. The flowers proceed from the top of the stem in a raceme consisting of eight or ten spreading blossoms, which are nearly three and a half inches wide; the lip is white at the base and in the centre, rosy lilac at the point and margin, and richly marked with small blood-red dots. It blooms in June and July, and lasts three or four weeks in perfection if kept in a cool-house. This makes a splendid plant for exhibition. We have seen specimens at the Chiswick and Regent's Park shows with as many as twenty spikes on one plant. A very distinct and desirable Orchid.—*Mexico; Guatemala*.

FIG.—*Bateman, Orch. Mss. et Guat.*, t. 33 ; *Bot. Mag.*, t. 4094 ; *Paxton, Mag. Bot.*, x. 169, with tab. ; *Hook. First Century*, t. 35.

BATEMANNIA, *Lindley*.

(Tribe Vandaceae, subtribe Cyrtopodiaceae.)

This is a small genus of dwarf, compact-growing plants, generally of free-flowering habit. They have short stems which scarcely become thickened into pseudobulbs, ample plicately-venose leaves, and large flowers on recurved peduncles. The dorsal sepal is free, erect, and concave, and the lateral ones adnate to the produced foot of the column, with which the lip is articulated. The species are mostly showy plants, and well worth growing, as they are easily accommodated.

Culture.—The *Batemannias* will do either in pots or baskets, or on blocks with moss. If grown in pots or baskets, peat and moss form the best material for potting. They should be placed in the *Cattleya* house, with a good supply of water in the growing season, and be shaded from the sun.

B. BEAUMONTII, *Rehb. f.*—A pretty dwarf-growing plant, with pyriform tetragonal pseudobulbs, plicated cuneate-oblong light green leaves, and erect one or two-flowered peduncles; the flowers are two inches in diameter, light green marked throughout with longitudinal stripes of pale olive brown, the lip white with light lilac-purple dots and streaks, trifid, the semi-oblong toothed side lobes incurved, and bearing on the disk between them about seven long parallel acute crests.—*Brazil: Bahia*.

FIG.—*Xenia Orch.*, iii. t. 215.

SYN.—*Stenia Beaumontii* ; *Galeottia Beaumontii*.

B. BELLA.—See *COELIA BELLA*.

B. BURTII, *Endr. et Rehb. f.*—This remarkable and beautiful plant, which is almost stemless, has leaves which measure a foot in length, and from two to two and a half inches in breadth, and are of a dark green colour. The peduncles are solitary, radical, erect, one-flowered, and the flowers are three inches across, yellow in the centre, the sepals and petals triangular oblong, reddish brown with brownish yellow chequered spots, the two petals having in addition a large dark-brown radiating blotch at the base; the basal part of the stalked trowel-shaped lip is white, the apex dark brown; the claw bearing a transverse semi-lunar two-lobed white auricle, cut into incurved setiform dark purple teeth. It has the peculiarity of throwing the roots out from between the bottom leaves. This species was first flowered in the collection of the late W. B. Hume, Esq., of Winterton, Yarmouth.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 6003; *Floral Mag.*, 2 ser., t. 101; *Warner, Sel. Orch. Pl.*, ii. t. 35; *Veitch's Man. Orch. Pl.*, ix. p. 45; *Gard. World*, ix. p. 17; *Reichenbachia*, 2 ser., ii. t. 66.

SYN.—*Zygopetulum Burtii*.



BATEMANIANTHA COLLEYI.

B. COLLEYI, *Lindley*.—A most distinct and beautiful species bearing oblong compressed furrowed quadrangular bulbs, two inches high; leaves solitary, broadly lanceolate acute, ribbed, coriaceous, deep green, spike produced from base of pseudobulbs, flowers two and a half to three inches across, sepals and petals purplish brown, greenish towards the base inside, green outside, lip erect, three-lobed, white dotted and streaked with red. Flowers during March and April.—*Demerara*.

FIG.—*Lindley Bot. Reg.*, xx. t. 1714; *Bot. Mag.*, t. 3818; *Orchid Album*, viii. t. 341; *Lindley*, viii. t. 365.

B. GRANDIFLORA, *Rehb. f.*—This extremely curious and very pretty Orchid was introduced some quarter of a century ago, but is not often to be met with. It has ovate pseudobulbs some three or four inches long, bearing two large broadly lanceolate leathery leaves. The peduncle comes up with the young growth, bearing a raceme of three or four flowers of curious structure; the sepals, of which the lateral ones are much the smaller, and the spreading petals, are olive green striped with reddish brown; the lip is white, with reddish purple streaks, and toothed margin and veins; the basal part orange-yellow with red streaks, developed into a semicircular frill or ruff with sharp pointed teeth in the middle, and having two acute toothed white side-lobes.—*New Grenada*: 4,000 ft. elevation, therefore not a cool Orchid.

FIG.—*Bot. Mag.*, t. 5567; *Bateman, 2nd Cent. Orch. Pl.*, t. 172.

SYN.—*Galeottia grandiflora*.



BATEMANNI
(From the *Ga*



MELEAGRIS.
Chronicle.

B. MELEAGRIS, *Rehb. f.*—A beautiful and interesting species, having a short erect stem, with the broadly-lanceolate leaves a foot long arranged in two close opposite rows; the peduncle is axillary, bearing one flower three to four inches in diameter, of which the sepals and petals are ovate acuminate, broad at the base, tessellated, pale yellow on the basal half and purplish brown upwards; the two lateral sepals folded inwards on the inner margin at the base. The lip is about half the size of the petals, similar in form, but with a distinct claw, white tipped with purplish brown, and having at the base of the claw a crescent-shaped plate, fringed with long stiff yellowish hairs. It is a scarce Orchid, blooming in June and July, and lasts a long time in beauty.—*Brazil*.

FIG.—*Bot. Reg.*, 1839, t. 14; *Maund, Bot.*, iii. t. 146; *Xenia Orch.*, i. t. 66, figs. 1, 2; *L'Orchdiophile*, 1889, p. 49.

SYN.—*Huntleya Meleagris*.

B. WALLISII, *Rehb. f.*—This showy plant was at first considered to be only a variety of *B. Burtii*, but has since been established as a distinct species. It has a running rhizome, which sometimes grows up 40 ft. high. The flowers are light greenish yellow outside, greenish brown inside, yellow at the base of the sepals, but having scarlet stripes at the base of the petals; lip greenish with a brownish tint at the apex, the bristles of the callus also being greenish. The lateral sepals are nearly four inches long, and broad in proportion. It flowers during the summer months.—*Costa Rica*.

FIG.—*Journ. of Hort.*, xxi., 1890, p. 9, fig. 5.

B. WALLISII MAJOR, *Rehb. f.*—This magnificent variety is a perfect giant, the flowers measuring as much as five and a half inches in diameter. It was first flowered by Sir Trevor Lawrence, Bart., in September, 1883, and is wonderfully distinct and handsome in appearance. The rhizomes are creeping and the leaves distichous. The sepals and petals are ovate-lanceolate acuminate, white at the base, and of a rich chestnut brown in the upper part, having a distinctly tessellated appearance, caused through the veins being very prominent and of a darker colour than the ground; the petals have some radiating stripes of deep purple at their lower extremities; the lip is lance-shaped, dark chestnut brown, reticulated, with a margin of blackish-purple. Mr. Roezl states that "it grows in a temperature of 75°—85° F. all the year round, in deep shade, in an atmosphere saturated with moisture, and where rain falls so constantly that the plant is almost always wet." It, as well as the type, ought to be in every collection.—*Costa Rica*.

BIFRENARIA, *Lindley*.

(Tribe Vandeae, subtribe Cyrtopodieae.)

A small genus of epiphytal Orchids containing about ten known species, mostly natives of Brazil. The name is derived from *bis*, double, and *fraenum*, a bridle, in reference to the two bridle-like attachments of the pollen masses. In years gone by, the plants of this

genus were more in cultivation than at the present time. It is closely allied to *Maxillaria* and *Lycaste*, but differs from both these genera in having the flowers produced in racemes instead of being solitary.

Culture.—These plants should be grown in the cool end of the *Cattleya* house, and succeed best grown in pots or on blocks, in a compost of peat and moss. The treatment they should receive is similar to that recommended for *Lycaste* and *Maxillaria*.



BEPHREMARIA AURANTIACA.

B. AURANTIACA, *Lindley*.—

An old and showy species, introduced in 1835, with broadly-ovate, compressed pseudobulbs; monophyllous. Flower spike erect, coming from the base of the pseudobulb, bearing three or four bright yellow flowers, faintly spotted with orange. Flowers during the winter months.—*Brazil; Demerara.*

FIG.—*Bot. Reg.*, xxii. t. 1875; *Bot. Maj.*, t. 3597; *Orchid Album*, ix. t. 386.

B. HARRISONIAE, see *Lycaste Harrisoniae*.

B. VITELLINA, *Lindley*.—This

species was introduced by Messrs. Loddiges, of Hackney, in 1838, and

until a short time ago was very rare. Pseudobulbs ovoid, angular, furnished with lanceolate-acute solitary leaves. Flowers small, about one inch in diameter, deep chrome yellow, having a distinct brown spot on the centre of the lip, which is heart-shaped and three-lobed.—*Brazil.*

FIG.—*Bot. Reg.*, 1839, t. 12.

SYN.—*Maxillaria vitellina*.

BLETIA, *Ruiz et Pavon.*

(Tribe Epidendraceae, subtribe Bleticeae.)

The species belonging to this genus are terrestrial, a few only being worth growing. The flowers of these are produced very freely when they are thoroughly established, and are valuable for cutting and bouquet work, on account of their pleasing colour and the long time they last in water. The pseudobulbs are round or flattened, often

tuberiform, and from these proceed the long narrow deciduous leaves. The sepals are free, and the lip spurless, its lateral lobes erect, parallel or spreading at the apex; the column is longish and footless. About a score of species are known, inhabiting Tropical America, West Indies, China, and Japan.

Culture.—All the species are of easy culture, and may be grown in the Mexican house or cool frame where there is a little heat. The best material for growing these plants in is a mixture of loam and leaf mould, with about two inches of drainage in the bottom of the pot, covered with a layer of moss or rough peat; the pots should be filled with the mould to within an inch of the top, the bulbs placed on the top of the mould, and just covered over. They require a good supply of water in the growing season, but not much heat. After their growth is finished, give them a good season of rest; and keep them rather dry till they begin to grow.

These plants require to be well grown to make them flower freely. The colour of the flowers is distinct from that of most of our Orchids, and produces a good effect in a house; and although they are not thought much of by many Orchid-growers, they are well worth the care that is bestowed upon them on account of their pleasing colours.

B. ACAULIS.—See BRASSAVOLA ACAULIS.

B. CAMPANULATA, *Ilave.*—The blossoms of this species are of a deep purple, with a white centre, and they grow in a few-flowered raceme. It flowers at different times of the year, and lasts long in perfection.—*Mexico; Peru.*

B. DIGBYANA.—See BRASSAVOLA DIGBYANA.

B. GLAUCA.—See BRASSAVOLA GLAUCA.

B. GRAMINIFOLIA.—See ARUNDINA BAMBUSAEFOLIA.

B. HYACINTHINA, *R. Brown.*—A handsome tuberous plant, with long lanceolate plicate leaves, and slender scapes a foot high, bearing flowers of a



BLETIA HYACINTHINA.

beautiful rose-purple; the lip is white, streaked with red in the centre, and spotted and broadly edged with deep crimson. It proves to be hardy under congenial treatment.—*China; Japan.*

FIG.—*Sm. Exot. Bot.*, i. t. 60; *Bot. Mag.*, t. 1492; *Loddiges, Bot. Cub.*, t. 1968; *Garden*, 1879, t. 205; *Blume, Orch. Arch. Ind.*, t. 6, fig. 1; *Thunb. Icon. Fl. Jap.*, t. 9.

SYN.—*Cymbidium hyacinthinum; Bletia japonica.*

B. HYACINTHINA ALBO-STRATA, *Siebold*.—This is exactly similar in habit to *B. hyacinthina*, but with all the nerves white, producing a very pretty striped variegation, and as it succeeds well in a cool-house it will be a valuable acquisition.—*Japan.*

B. JAPONICA.—See *BLETIA HYACINTHINA*.

B. LINEATA.—See *BRASSAVOLA LINEATA*.

B. MASUCA.—See *CALANTHE MASUCA*.

B. PATULA, *Graham*.—A fine species, with roundish bulbs or tubers, lanceolate plicate leaves a foot and a half long, and long erect scapes three feet high, bearing many (20) flowers in a terminal raceme. The flowers are large, spreading, upwards of two inches across, and of a reddish lilac or rose colour, with the six lamellae on the disk white. It blooms in March or April. This plant should be placed in the *Cattleya* house during the growing season, but must be removed to a cooler place to rest.—*West Indies.*

FIG.—*Bot. Mag.*, t. 3518; *Part. Fl. Gard.*, ii, 69, fig. 169.

B. SHEPHERDII, *Hooker*.—A robust-growing species, with broadly-lanceolate dark green leaves a foot and a half long, and branching flower scapes two to three feet high. The flowers are of a deep reddish purple, marked down the centre of the lip with from five to seven creamy yellow lamellae. It blooms during the winter months, and remains in perfection three or four weeks.—*Jamaica.*

FIG.—*Bot. Mag.*, t. 3319; *Paxton Mag. Bot.*, ii, 146, with tab.

B. SHERRATTIANA, *Bateman*.—A charming species, resembling *B. patula* in habit. It has flattened corm-like pseudobulbs, plicate lanceolate acuminate leaves, and erect scapes three feet high, bearing a raceme of large showy flowers of a bright rose-colour; the lip, which is three-lobed, with the lateral lobes rounded and flat, and the middle one smaller and reniform, is of a deeper rosy purple with three orange-coloured lamellae down the white centre. It is a most desirable acquisition to the terrestrial section of Orchids. When growing, it should be kept in the cool-house.—*New Grenada.*

FIG.—*Bot. Mag.*, t. 5646.

B. VENOSA.—See *BRASSAVOLA VENOSA*.

BOLLEA, *Reichenbach fil.*(Tribe Vandeeae, ~~subtribe~~ Cyrtopodiace.)

In their manner of growth the species of *Bollea* are much like those of *Pescatorea*, but the flowers are quite different. Both Reichenbach and Bentham and Hooker regard the group as a section of *Zygopetalum*. Their chief peculiarities consist in their one-flowered scapes, their broad sepals and petals, their ample rounded shortly-clawed lip, which has a prominent crest on the disk, and their short thick column, which has the anther-bed entire and subcucullate. The species are not numerous, and all inhabit Tropical America.

Culture.—These plants succeed well in the warm-house in a mixture of peat and moss, and they require an abundant supply of water during the time of growth. Many persons cultivate them in pots, but we have found them do well on blocks and in cork baskets, especially those formed of fern stems, but treated in this way they require an abundant supply of water when growing.

B. COELESTIS, *Rehb. f.*—In growth this species resembles *B. Lalindei*, but the colouring of the flower is altogether brighter and more distinct. The leaves are close-set, distichous, and cuneate-oblong; the scapes fifteen to eighteen inches high; the flowers large, three to four inches across, the oblong-acute sepals and the shorter petals light blue at the base, deeper mauve in the middle, the marginal tips white; the lip is deep violet in front, the prominent basal callus yellowish white, consisting of fifteen nearly contiguous lamellæ. The boat-shaped column is of a fine deep violet blue, except the base, which is yellow. This will form a fine distinct exhibition plant. It flowers in June and July, and will last a long time in perfection.—*Colombia*.

FIG.—*Belg. Hort.*, 1879, t. 9; *Bot. Mag.*, t. 6458.

B. LALINDEI, *Rehb. f.*—A very distinct plant of recent introduction. The leaves are elliptic lanceolate, narrowing to the base, five-nerved, a foot long, distichous; the scapes are solitary; the flowers are about three inches across, the sepals and petals in plants flowered by us lilac at the base, pale rose in the upper part, with the tips straw-colour, and the lip golden yellow, with about thirteen close-set lamellæ; but in those described by the late Prof. Reichenbach they were of a bright violet, the upper sepal tipped with green, the lower halves of the lateral sepals brownish purple, the lip deep orange, and the column deep purplish. The column is very peculiar, being broader than the lamellate disk, arched and rose-coloured.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 6331.

B. LAWRENCEANA, *Rehb. f.*—A beautiful and delicately-coloured species, resembling *B. coelestis* in growth. The plant is dwarf, almost stemless, with

distichous broadly-ligulate acuminate leaves more or less keeled; and axillary scapes, each supporting a solitary flower, which measures three and a half to four inches across, white distinctly blotched with violet or mauve at the tips of both the sepals and the petals, the white being continued outside the blotch so as to form a narrow margin. The lip is much shorter than the other parts, squarish with the sides revolute, the apex of an intense rich velvety purple, the basal callus large, bright yellow, white on each side. The broad hooded white column is also a conspicuous object in the centre of the flower.—*U.S. Colombia*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 13; *Xenia Orch.*, iii. t. 221.

B. PATINII, *Rchb. f.*—A fine and distinct plant having some resemblance to *B. Lalindei*, but with larger flowers less brightly coloured. The leaves, which are distichous, are nervose, broadly oblong-ligulate, narrow at the base, and acute at the apex. The scapes spring from the leaf-axils, and are decurved, each bearing a solitary flower upwards of three inches across; the dorsal sepal and the obtuse petals, all of which are oblong and undulated, are of a rosy-pink, while the two lower sepals are pink along the upper half, and deep rose along the lower side; the short lip is yellow, as is the frill of about thirteen lamellae on the disk, and has the large convex pink column arching over it.—*New Grenada*.

FIG.—*Floral Mag.*, 2 ser., t. 147; *Gard. Chron.*, N.S., iii. 8, fig. 1.

BRASSAVOLA, *Robert Brown*.

(Tribe Epidendreae, subtribe Laeliace.)

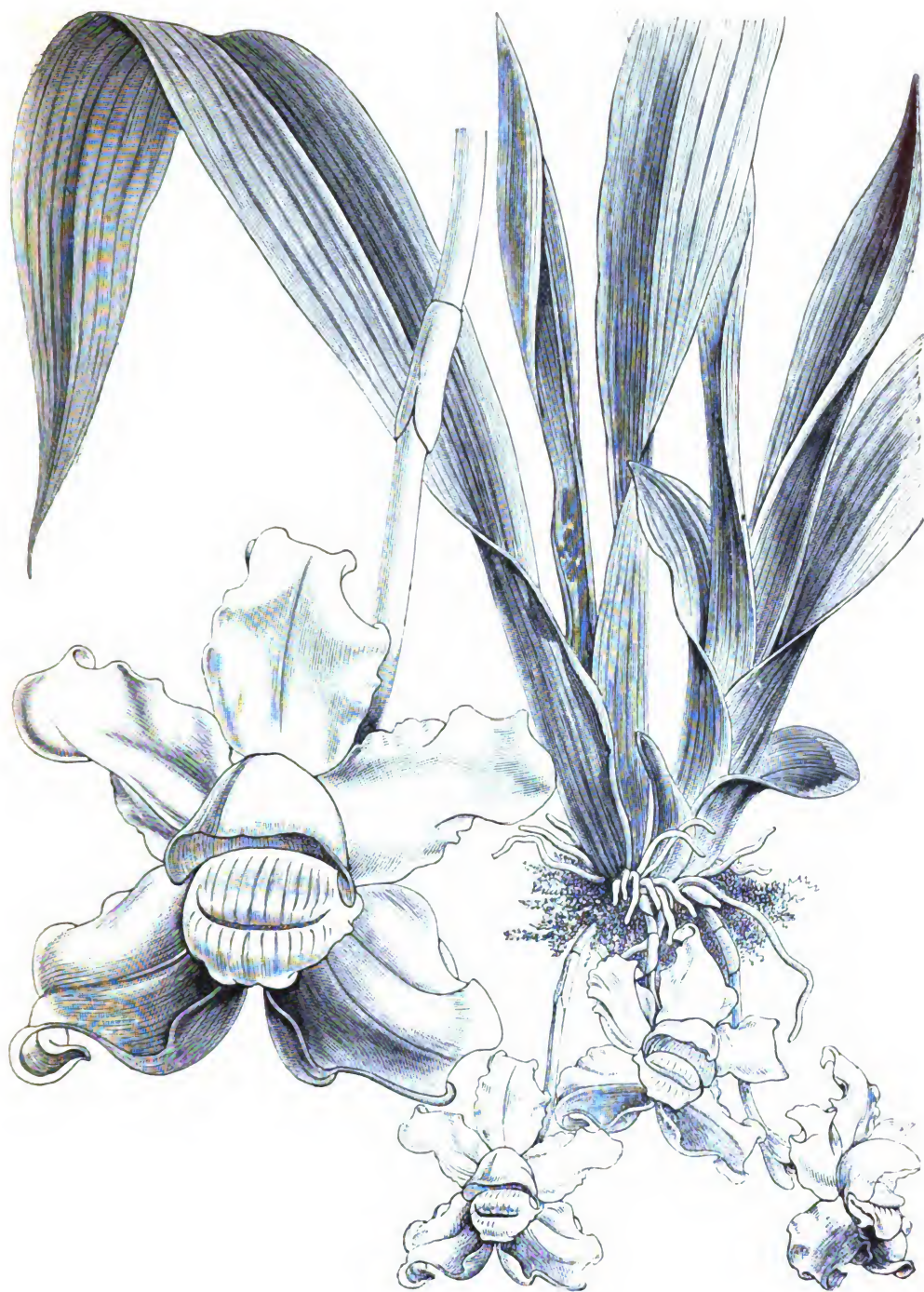
Epiphytal plants, with somewhat thickened stems, bearing one or two fleshy sub-terete or thickly linear leaves, and terminal showy flowers, of which the sepals are long and spreading, the lip sessile, its basal lobes folded over the column, and its front lobe abruptly expanded. There are about a dozen species, natives of Brazil, the West Indies, and Mexico, but only a few that are sufficiently showy to be worth growing by the majority of amateurs.

Culture.—These plants are of easy culture, and grow best in a little moss on blocks of wood suspended from the roof; a liberal quantity of water is necessary during the growing season, but afterwards much less will suffice. They are best grown in the warmest house, and are propagated by dividing the plants.

B. ACAULIS, *Lindley*.—A very interesting species, with rush-like foliage and a compact stemless habit of growth, strikingly different from all others except *B. glauca*. The flowers are large, with the sepals and petals long, narrow, and greenish or creamy white, the lip being large, heart-shaped and pure white, with the base of the tube spotted with dull rose. They are produced in September, and remain a long time in beauty.—*Central America*.

FIG.—*Part. Fl. Gard.*, ii. 152, fig. 216; *L'Orchidophile*, 1884, p. 233.

SYN.—*Blattia acaulis*.



BOLLEA PATINII.

B. DIGBYANA, *Lindley*.—A fine compact evergreen species, about six inches high, with stem-like compressed pseudobulbs, bearing a solitary elliptic glaucous fleshy leaf, and from its base a peduncle supporting one very large flower five inches wide and six inches deep; the sepals and petals are oblong spreading, pale green with a purplish tinge, and the cucullate cordate lip is creamy white, tinged with purple at the tip, the margin deeply and beautifully fringed. It produces its solitary flowers, which are deliciously fragrant at night, during the winter months from the top of the bulb, and continues for about two or three weeks in bloom.—*Honduras*.

FIG.—*Bot. Mag.*, t. 4474; *Bot. Reg.*, 1846, t. 53; *Flore des Serres*, t. 237; *Orchid Album*, vi. t. 241.

SYN.—*Bletia Digbyana*.

B. GIBBSIANA, *Williams*.—This is a beautiful and distinct species, well worthy of general cultivation. It is an erect plant, belonging to the terete-leaved section, though in the present species the leaves are somewhat broad and very thick. It is a most profuse bloomer, producing three flowers upon each spike, which are large and white, spotted with chocolate. The temperature of the *Cattleya* house suits it best, and it should be potted in peat and sphagnum moss.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2878.

SYN.—*B. tuberculata*.

B. GLAUCA, *Lindley*.—A desirable compact evergreen Orchid, with a slowly-creeping rhizome, from which proceed coriaceous oblong retuse glaucous leaves, having short pseudobulb-like petioles; a solitary large flower is developed from the leaf axil, the spreading sepals and petals are pale green, and the expanded cordate lip pure white with some pink streaks in the throat. It blooms in February or March, and lasts two or three weeks in perfection. This is found rather difficult to flower in some collections, but it blooms every year if the plant is strong, producing one large flower from a sheath at the top of the pseudobulb.—*Mexico*; *Guatemala*.



BRASSAVOLA GLAUCA.

FIG.—*Bateman, Orch. Mex. et Guat.*, t. 16; *Bot. Mag.*, t. 4033; *Bot. Reg.*, 1840, t. 44; *Hooker's 1st Cent. Orch. Pl.*, t. 22; *L'Orchidophile*, viii. 1888, p. 88; *Gard. Chron.*, 3 ser., vii. 1890, p. 357, f. 52; *Orchid Album* ix. t. 415.

SYN.—*Bletia glauca*; *Laelia glauca*.

B. LINEATA, *Hooker*.—The present plant, which is allied to *B. acaulis*, is too much neglected by Orchid growers. It has very short cylindrical stems, long, very deep green semi-terete tapered leaves, channelled above, and large and very

fragrant flowers, with the sepals and petals creamy white, and the large cordate lip pure white. It is a pendulous plant, and requires to be grown on a block, in the *Cattleya* house.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 4734.

SYN.—*Bletia lineata*; *Brassavola Matheuana*.

B. MATHEUANA.—See *BRASSAVOLA LINEATA*.

B. TUBERCULATA.—See *BRASSAVOLA GIBBSIANA*.

B. VENOSA, *Lindley*.—A pretty free-flowering small and compact species. It has fleshy lanceolate semi-cylindrical leaves and three-flowered scapes of white flowers having greenish sepals; these are produced at different times of the year. It grows best on a block suspended from the roof of the house.—*Central America*.

FIG.—*Bot. Mag.*, t. 4021; *Bot. Reg.*, 1840, t. 39.

SYN.—*Bletia venosa*.

BRASSIA, *Robert Brown*.

(Tribe *Vandeeae*, subtribe *Oncidiaceae*.)

This genus is nearly allied to *Oncidium*, differing in the narrow, very-much-elongated sepals and petals; in the shorter undivided lip, which is sessile at the base of the column, plane, bi-lamellate at the base; and in the short wingless column. The flowers are in loose simple racemes. In some of the species they are dull coloured, so that the genus is not in great repute with Orchid growers; but nevertheless, there are a few kinds that are showy, free-flowering, and last a long time in bloom, and which ought to be in every collection. All have dark green pseudobulbs, and evergreen foliage a foot or more in length. The species inhabit Tropical America, Brazil, the West Indies, New Grenada, and Mexico, and are about a score in number.

Culture.—The *Brassias* are evergreen plants of easy culture, and will do either in the East Indian or *Cattleya* house. The flowers are produced from the side of the pseudobulbs on long drooping spikes. They are best grown in pots, with rough fibrous peat and good drainage, for they require a liberal supply of water at the roots in the growing season, though later on just enough water to keep their bulbs plump will suffice. They should never be allowed to shrivel. They are propagated by dividing the plants when they begin to grow.

B. ANTHEROTES, *Rchb. f.*—A very ornamental species, growing about eighteen inches high, with oblong monophyllous pseudobulbs, and radical scapes bearing racemes of numerous large firm-textured flowers, the long narrow

sepals and petals deep yellow with purple-brown blotches at the base, and the lip brighter yellow spotted over the disk and central portion, half as long as the sepals, and marked on the disk with an oblong-ligulate orange-coloured crest. It flowers in May and June, and lasts about three weeks in blossom.—*Ecuador*.

FIG.—*Orchid Album*, iv. t. 159.

B. CAUDATA, *Lindley*.—An old Orchid introduced by Mr. Lee of Hammer-smith, many years ago. Pseudobulbs oblong, about three inches high, furnished with two leaves at the apex, flowers produced on a many flowered raceme, sepals about five inches long, greenish-yellow, petals shorter, same colour, and lip yellow, with a few large purplish-brown spots.—*West Indies*.

FIG.—*Bot. Reg.*, t. 832; *Bot. Mag.*, t. 3451; *Hook Exotic Flora*, t. 179; *Hooker's First Cent. Orch. Pl.*, t. 82.

B. CAUDATA HIEROGLYPHICA, *Rchb. f.*—In habit this variety resembles the type, sepals and petals deep yellow, irregularly blotched and barred with cinnamon-brown, lip yellowish-white with a few purple-brown spots at the base.—*Mexico*.

FIG.—*Lindenia*, ii. t. 76.

B. CINNAMOMEA.—See *BRASSIA KEILIANA*.

B. GIROUDIANA, *Rchb. f. et Warsc.*—A very handsome species and of easy culture and good robust habit. Its pseudobulbs are stout oblong two-edged; the leaves are oblong acute with a cuneate base, of a light green colour, and the scapes are two feet high, bearing racemes of many flowers, which are large, bright yellow spotted with red.—*Costa Rica*.

FIG.—*Xenia Orch.*, i. t. 32.

SYN.—*Oncidium Giroudianum*.

B. GUTTATA, *Lindley*.—A very pretty species, considered by some botanists to be synonymous with *B. Wrayae* and a mere variety of *B. maculata*. It produces its flowers on spikes two to three feet long; the sepals and petals yellowish green blotched with brown, and the broad lip yellow spotted with brown; it blooms from May to August, and continues flowering for about two months.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 4003.

B. KEILIANA, *Rchb. f.*—A very distinct plant of dwarf compact growth, remarkable for its boat-shaped bracts, longer than the ovaries. The flowers, which grow in a loose many-flowered raceme, have the sepals and petals at first yellow, and then turning to a beautiful brownish orange, cinnabarine when dried; the lip being whitish. This plant succeeds well in the *Cattleya* house.—*New Grenada: St. Martha*.

FIG.—*Xenia Orch.*, i. t. 45.

SYN.—*Brassia cinnamomea*, fide *Rchb.*; *Oncidium Keilianum*.

B. KEILIANA TRISTIS, *Rchb. f.*—This variety differs from the preceding plant in having the sepals and petals deep brownish-purple instead of yellow, lip lemon-yellow, bearing a few brown spots near the base.—*Caracas: Ocana*.

FIG.—*Xenia Orchid*, i. t. 45; *Orchid Album*, viii. t. 347.

B. LANCEANA, *Lindley*.—A free-flowering Orchid, blooming at different times of the year, and bearing yellow fragrant blossoms lightly spotted with brown, which last three weeks in perfection. It has ovate-oblong pseudobulbs, broadly-lanceolate striated leaves, and long racemes of flowers, the peduncle or scape springing from the base of the bulb. There are two varieties of this plant, one named *macrostachya*, much better than the other, having larger and brighter coloured flowers.—*Guiana : South Brazil*.

FIG.—*Bot. Mag.*, t. 3577 ; *Id.* t. 3794 (var.) ; *Bot. Reg.*, t. 1754 ; *Hooker's First Cent. Orch. Pl.*, t. 13.

SYN.—*Oncidium suaveolens*.

B. LAWRENCEANA, *Lindley*.—A handsome species, blooming abundantly from June to August, and having long racemes of very fragrant flowers, in which the petals are much shorter than the sepals, which are fully three inches long, the lip oblong-lanceolate acuminate and wavy, with two pubescent connate lamellae, truncate in front. The colour of these flowers is bright yellow tinged with green at the base and spotted with reddish-brown ; they last three or four weeks in good condition, if kept dry.—*Brazil*.

FIG.—*Bot. Reg.*, 1841, t. 18 ; *Moore, Ill. Orch. Pl.*, *Brassia*, t. 1.

SYN.—*Oncidium Lawrenceanum*.

B. LAWRENCEANA LONGISSIMA, *Rehb. f.*—A very striking variety of the species, in which the sepals are very much lengthened out. The pseudobulbs are oblong, much compressed, three and a half inches long, the leaves six to eight inches long, oblong-lanceolate, and the peduncles radical, many-flowered. The sepals are as much as seven inches long, dark orange-yellow, with large deep red-purple blotches, the ovate-lanceolate pointed lip three inches long, pale yellow, with a row of purple spots surrounding the two truncate pubescent lamellae of the disk. The petals are much shorter than the sepals. It is deserving of a place in every collection.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 5748.



BRASSIA MACULATA.

B. MACULATA, *R. Brown*.—The original species and type of the genus. It is a rather showy free-flowering plant, with oblong, compressed pseudobulbs, oblong acute stoutish leaves, and racemes one to two feet high of handsome flowers, which spring from the axils of accessory leaves sheathing the bulbs ; the flowers are large, the sepals and petals yellowish spotted with reddish brown, the roundish mucronate lip white spotted with purple towards the base,

the basilar lamellae pubescent produced into a tooth at the summit. It flowers in May and June.—*Jamaica*.

FIG.—*Bot. Mag.*, t. 1691 (inaccurate) ; *Pact. Mag. Bot.*, vi. 5, with tab. ; *Vitch's Man. Orch. Pl.*, viii. p. 126.

B. MACULATA MAJOR, *Hort.*—A very free-flowering form of the older species. The sepals and petals are greenish yellow spotted with brown, and the lip is white spotted with dark brown; it flowers in May and June, and lasts for five weeks in bloom if kept in a cool-house.—*Jamaica*.

B. VERRUCOSA, *Lindley*.—A curious species, in which the upper part of the flower is pale green, and the lip white, marked with green warts. It blossoms abundantly in May and June.—*Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 22.

SYN.—*Oncidium verrucosum*.

B. VERRUCOSA GRANDIFLORA, *Williams*.—A very fine variety, of stronger growth than the typical *B. verrucosa*, and with flowers twice the size, and of a lighter colour. This is one of the best of the genus we have seen, and is well worth a place in every collection.—*Guatemala*.

BROUGHTONIA, *Robert Brown*.

(Tribe Epidendreae, subtribe Laclieae.)

A small genus of epiphytes, which is included in *Epidendrum* by Reichenbach. It belongs to the series of *Laeliae* having four pollen masses, and thus technically comes near to *Cattleya*, with which it agrees in the lip folding over the apodous column, but differs in having the ovary produced into a long hollow neck or cavity. Some three or four species are known, natives of the West Indies; *B. sanguinea*, the most familiar species, is common in the Islands of Cuba and Jamaica, more especially the latter, where it grows on rocks fully exposed to the influence of the sun.

Culture.—This plant succeeds best suspended from the roof on a block of wood, with a little moss, and as near the light as possible. It requires a good supply of heat and moisture in the growing season. It is propagated by separating the pseudobulbs.



BROUGHTONIA SANGUINEA.

B. SANGUINEA, *R. Brown*.—A very compact-growing evergreen epiphyte, with roundish ovate clustered pseudobulbs, bearing one or two linear oblong leaves, from between which springs the peduncle, eight to twelve inches high,

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supporting a raceme of from six to nine flowers of a very rich crimson, the sepals narrow lanceolate, keeled, the petals broadly ovate, and the lip roundish cordate; these flowers are produced during the summer months, and last a long time in good condition. This plant ought to be in every collection, on account of the distinct and brilliant colour of its flowers.—*Jamaica ; Cuba.*

FIG.—*Bot. Mag.*, t. 3076 ; *Id.*, t. 3536 (as *coccinea*) ; *Loddiges, Bot. Cub.*, t. 793.

SYN.—*Epidendrum sanguineum* ; *Dendrobium sanguineum*.

B. LILACINA.—See *LAELIOPSIS DOMINGENSIS*.

B. VIOLACEA.—See *LAELIOPSIS DOMINGENSIS*.

BULBOPHYLLUM, *Thouars.*

(Tribe Epidendreae, subtribe Dendrobicae.)

The flowers in this genus are in general more curious than beautiful. The plants mostly have creeping rooting rhizomes, with pseudobulbs in the axils of the scarious sheaths, one or two leaves from the top, and a raceme or umbel of numerous small flowers on a peduncle springing from the base of the bulbs. In a few instances they are larger and solitary. The flowers are in many cases curious, particularly the labellum or lip, which is articulated and moveable, the least breath of air or the slightest cause of motion being sufficient to set up a tremulous or dancing movement in this organ. Of the numerous species which are widely dispersed in Asia, Africa, America, and Australia, only a few are worth the attention of the amateur cultivator. The name is more commonly written *Bolbophyllum*, but the form we have adopted is the original orthography of Du Petit Thouars.

Culture.—The Bulbophyls are chiefly valued as curiosities; they require but very little room, and thrive best on small blocks of wood with a little moss, suspended in a warm part of the house; the roots require a good supply of water. They are propagated by separating the pseudobulbs.

B. ANCEPS, Rolfe.—Pseudobulbs roundish ovate compressed, leaves solitary linear oblong, obtuse, flowers small, several on a raceme, sepals and petals yellowish white, inferior half of lateral sepals striped with maroon purple, the inferior half also the dorsal sepal and petals spotted with the same colour, lip dark maroon purple.—*Borneo.*

FIG.—*Lindenia*, viii. t. 351.

B. AURICOMUM, Lindley.—In this plant the pseudobulbs are an inch and a half high, the leaves deciduous, and the flowers small, light green, in a spike ten inches long, drooping like a *Pholidota*; they are white and deliciously fragrant, and are produced in January.—*India.*

B. BARBIGERUM, *Lindley*.—A curious and charming dwarf-growing plant, with dark green oblong fleshy leaves, and small orbicular pseudobulbs, from the base of which grows the peduncle, supporting a raceme of some eight to ten flowers. The sepals are narrow, greenish brown; the petals minute, not apparent, but the lip is most extraordinary; it is a long narrow yellowish body, with two deep purple beards of fine hairs at the point, and from its tip a brush of long purple threads, so delicate that the least disturbance of the air sets them in motion. Besides all this, the lip is so loosely attached at the base as to be moved with the slightest breath, which gives it the appearance of a living thing. It lasts long in bloom.—*Sierra Leone*.

FIG.—*Bot. Reg.*, t. 1942; *Bot. Mag.*, t. 5238; *Vitch Manual Orch. Pl.*, iii. p. 94.

B. DEAREI, *Rehb. f.*.—A large flowered species, first flowered in 1883 by Col. Deare. Pseudobulbs ovate, about two inches high, microphyllous flowers about three inches across, dorsal sepal yellow veined with deep orange, lateral sepals yellow suffused with purple, petals clear yellow veined with deep orange; lip creamy white spotted with purple at the base.—? *Philippines*.

FIG.—*Gard. Chron.*, 1883, n.s. xx. p. 108, fig. 17; *Lindenia*, viii. t. 108; *Journ. of Hort.*, xxiv. 1892, p. 237, fig. 38.

SYN.—*Sarcopodium Dearci*.

B. LOBBII, *Lindley*.—The flowers of this species are large, the sepals and petals deep tawny yellow, the upper sepal spotted at the back with purple. It produces its solitary flowers on radical scapes from the base of the ovate one-leaved pseudobulbs during the summer months, and lasts long in beauty. *B. Henshallii* is a pale variety.—*Java*.

FIG.—*Bot. Mag.*, t. 4532; *Part. Fl. Gard.*, i. 154, fig. 98; *Lem. Jard. Fl.*, t. 63; *Gard. Mag. Bot.* iii. 269 (var. *Henshallii*); *Lindenia*, v. t. 195.

SYN.—*Sarcopodium Lobbii*.

B. MACRANTHUM, *Lindley*.—A pretty species, producing small pseudobulbs on a creeping rhizome; leaves ovate-lanceolate. The flowers, which are borne singly on the short pedicels, are of a purplish rose-colour, covered with darker spots of the same colour. The lateral sepals are partly united, forming a pointed conical hood.—*Burma*; *Malay Archipelago*.

FIG.—*Bot. Reg.*, 1844, t. 13; *Annals of Botany*, 1890, iv. p. 335, t. 22, f. 1-6; *Bot. Mag.*, t. 7208.

SYN.—*Sarcopodium macranthum*.

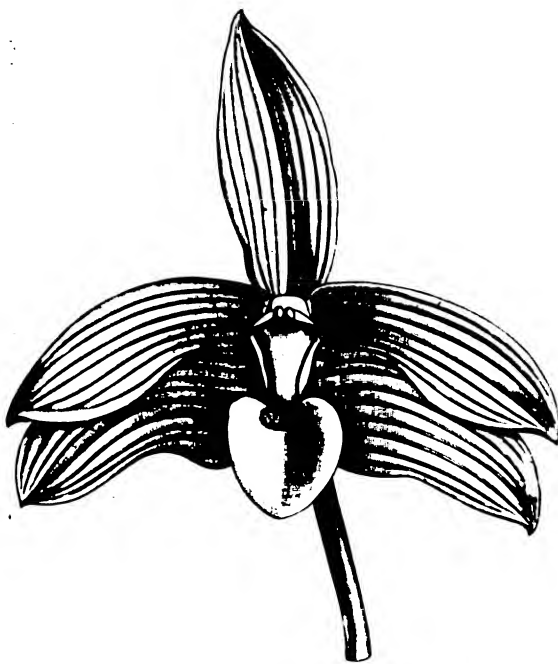
B. MACULATUM, *Hort.*.—An interesting and pretty species; it has long obtuse bright green leaves, and pale yellow prettily-spotted flowers. It is of easy culture, and must be kept in the warm house.—*India*.

B. RETICULATUM, *Bateman*.—This is a very singular Orchid, the handsomest of the genus, the leaf being three to five inches long, and somewhat heart-shaped, with the nerves of a deeper green than the rest of the surface, giving it a beautifully-reticulated appearance; the flowers, which are borne in pairs, are white, striped inside with purple, and the lip is spotted with the same colour. It is easy of culture, delighting in the strong heat of the East Indian house.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5605; *Bat'm. 2nd Cent. Orch. Pl.*, t. 190.

B. SALTATORIUM, *Lindley*.—A curious dwarf Orchid with flowers of a greenish brown colour, produced at different times of the year, and lasting some time in perfection. The plant should be grown in the East Indian house.—*West Africa*.

FIG.—*Bot. Reg.*, t. 1970.



BULBOPHYLLUM SIAMENSE.

B. SIAMENSE, *Rehb. f.*
—A very pretty species, and well adapted for those who, having but little space, devote it to the small-growing kinds. The pseudobulbs are ovate, the leaves longer and stouter than those of *B. Lobbii*, and the flowers pale nankin yellow striped with purplish brown, the hinged lip being yellow streaked with purplish black lines, and having a deep yellow disk. It should be grown in a pot, with peat and sphagnum moss.—*Siam*.

FIG.—*Refug. Bot.*, ii. t. 116.

BURLINGTONIA, *Lindley*.

(Tribe Vandeae, subtribe Oncillicae.)

There are some beautiful species in this genus, all of which, except *B. decora*, are of a very compact habit of growth. They have pseudobulbs, terminated by one or two evergreen leaves, four to six inches high, and produce their delicately-coloured flowers mostly on drooping spikes from the side of their pseudobulbs. They have the dorsal sepals free, and the lateral ones connate, petals resembling the dorsal sepal, and a lip furnished with a conspicuous incurved spur. The few species, which are by some referred to *Rodriguezia*, are all found in Tropical America, and some are deliciously sweet-scented.

Culture.—These plants ought to be in every collection, however small, as they require but little room, and may be easily grown to

perfection. They thrive best in small baskets or pans with sphagnum moss and potsherds, and require a good supply of heat and moisture while growing. They need but little rest, and should never be suffered to get too dry at the roots. They are propagated by division.

B. AMOENA.—See *BURLINGTONIA DECORA*.

B. BATEMANNI, *Hort.*—A very pretty species, in general appearance resembling *B. candida*. The flowers are white and deliciously scented, but the lip, instead of being tinted with yellow, as is usual in the genus, is of a beautiful mauve colour.—*South America*.

B. CALOPLECTRON, *Rchb. f.*—A very beautiful species introduced by us through Mr. C. Patin. The pseudobulbs are small, oblong-ligulate, two-edged, with solitary, thick, lanceolate leaves; inflorescence pendulous, few-flowered. Flowers about the size of *B. fragrans*, and of a pleasing rose colour. This forms a very pretty object for a basket.—*U. S. Colombia*.

B. CANDIDA, *Lindley*.—A handsome free-flowering compact-growing species, with very small ovate pseudobulbs, oblong leaves, and drooping spikes of flowers, which are large, fragrant, white, except on the upper part of the lip, which is yellow, and has several fleshy lamellae in two series on the disk. It flowers in April and May, and sometimes at other seasons, lasting about three weeks in perfection. To grow this species in perfection, a good supply of moisture is necessary at the roots; indeed, it should never be allowed to get dry.—*Demerara*.



FIG.—*Bot. Reg.*, tt. 1927, 1929; *Floral Mag.*, t. 548; *Orchid Album*, i. t. 18.

SYN.—*Rodriguezia candida*. *Rchb. f.*

BURLINGTONIA CANDIDA.

B. DECORA, *Lemaire*.—A beautiful free-flowering species of somewhat straggling habit, as it makes long wiry growths between each of the ovate two-edged pseudobulbs from which the roots proceed. The leaves are linear-oblong, leathery; and the flowers are produced on lax upright spikes, and are of a delicate white, pencilled with light rose, the sepals and petals convergent, and the large white lip roundish and bilobed. It blooms during the winter months, and succeeds best in a basket, or on a block suspended from the roof.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4834; *Batem*, 2nd Cent. *Orch. Pl.*, t. 110; *Lemaire*, *Jard. Fl.*, t. 183; *Fl. des Serres*, t. 716; *Pact. Fl. Gard.*, iii. 99, fig. 278.

SYN.—*B. amoena*; *Rodriguezia decora* *Rchb. f.*

B. DECORA PICTA, *Hooker*.—This is a very fine form of the preceding, stronger in growth, with much larger flowers, richer in colour, and altogether a superior variety. It produces its beautiful flowers on branching spikes, some of them bearing as many as twenty blossoms.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5419.

B. FARMERI, *Hort.*—This is a very pretty species, and well worthy of general cultivation. It resembles *B. candida* in habit and appearance, and is a very free bloomer, producing its elegant white and yellow flowers in early summer. It succeeds best grown on a block or in a basket with sphagnum moss, suspended from the roof in the *Cattleya* house.—*Native Country not known.*

B. FRAGRANS, *Lindley*.—A charming species, the flowers of which are deliciously fragrant, the perfume resembling that of the hawthorn. They grow in pendent racemes, and have the sepals and petals white, and the lip white stained with yellow down the centre; they are produced in April and May, on a drooping spike, and last three or four weeks in beauty if kept free from damp.—*Brazil.*

FIG.—*L'Orchidophile*, Oct., 1884, p. 297, photograph; *Gard. Chron.* 3 ser., iv. 1888, p. 757, fig. 106; *Orchid Album*, viii. t. 363.

SYN.—*Rodriguezia fragrans*.

B. KNOWLESII, *Hort.*—A beautiful species, somewhat similar in habit to *B. tenusta*, very dwarf and compact. The flowers are white, slightly tinged with pinkish lilac, and produced in long racemes. It blooms during the autumn, and continues in perfection a long time. A scarce Orchid.—*Native Country not known.*

B. LEEANA, *Williams*.—A very distinct and beautiful species, producing drooping spikes of flowers. In growth it resembles *B. fragrans*, but is somewhat stronger, with ligulate ancipitous pseudobulbs and linear-lanceolate leaves a foot long. It produces ten or more flowers on a spike; the sepals and petals are cream-colour with a yellow mid-line, and flushed with pale rosy purple, the lip cream-colour spotted with rosy purple of different shades, the crest yellow of two long linear keels, each having four small lateral keels spreading outwards. The blossoms have a delicious perfume. It flowers in January and February.—*Rio Negro.*

SYN.—*Rodriguezia Leeana*.

B. VENUSTA, *Lindley*.—A very pretty species, with rigid dark green leaves, and pendulous racemes of flowers, which are white, with yellow down the centre of the lip. It blooms at different times of the year, and lasts two or three weeks in good condition.—*Brazil.*

FIG.—*Ill. Hort.*, t. 188; *Sertum Orch.*, t. 2; *Veitch's Man. Orch. Pl.* ix. p. 176.

SYN.—*Rodriguezia tenusta*.



CALANTHE, Robert Brown.

(Tribe Epidendreae, subtribe Coelogynae.)

Vanda

Calanthe

There are some beautiful species belonging to this genus, and consequently these plants are great favourites. They are of easy culture, having bold evergreen foliage, except in the case of the *vestita* group—*C. vestita*, *C. Veitchii*, *C. Turneri*, *C. Williamsii*, and *C. Regnierii*—which are deciduous, losing their leaves during the season of rest. The latter

deciduous group is sometimes separated from *Calanthe* as a distinct genus under the name of *Preptanthe*. *Limatodes* is also included as a near ally of *C. vestita* by Bentham and Hooker. Nearly all the species have striking and attractive flowers, one peculiarity of which is that the claw of the lip is, in most cases, connate with the column.

The evergreen species are, for the most part, rather large upright-growing plants with plaited leaves, which in some are as much as a foot and a half long and six inches broad. In this group the long erect floral racemes come up between the leaves and are developed along with them. The deciduous species, on the other hand, produce their flowers after the leaves and bulbs are completed. When the blooming period is passed, the pseudobulbs should be allowed to go to rest in a leafless condition until the season for again starting into growth.

Culture.—The majority of the *Calanthes* are terrestrial Orchids, and are consequently best grown in pots, with loam, leaf mould, and rotten dung mixed together. When they are planted, two inches of drainage should be put at the bottom of the pot, then a layer of moss or rough peat; after which the pot should be filled up with the mould, so as to leave the plant about level with the rim. They succeed best when grown in the Indian house, and require well watering at the roots in their growing season, so that the mould is never allowed to get dry. A little manure water should be given when in vigorous growth once a week, but it must not be used too strong. But little rest is required by the evergreen kinds, and during the resting period only enough water to keep the soil slightly damp will be required. The deciduous species require a thorough resting period, after the pseudobulbs are matured and completed and the flowering season is past, as at this season they lose their roots. They require to be repotted in spring, the best time for which is just as they begin to start into growth. These plants are very much subject to the brown and white scale, which should be diligently sought for and destroyed, as, if they are allowed to accumulate, the plants will not thrive. They are propagated by separating the bulbs. The following are the most beautiful of the species.

C. BARBERIANA, *Rchb. f.*—A hybrid between *C. vestita* and *C. Turneri*, raised by J. T. Barber, Esq., Spondon, Derby. Flowers pure white with yellow eye, in some cases the lip is faintly flushed with purple at its base.—*Garden hybrid*.

C. BELLA, *Rehb. f.*—A distinct hybrid, which, as Professor Reichenbach remarks, deserves an honourable place amongst these useful and ornamental plants which do so much to enliven our dull, short winter days. It was raised in Messrs. Veitch & Sons' nursery, the parents being *C. Turneri* and *C. Veitchii*, the latter species being the father. The pseudobulbs resemble those of *C. vestita*. The flowers are produced in long arching racemes, and are as large as those of *C. Turneri*; the sepals white, the petals of a delicate blush, and the broad deeply-cleft four-lobed lip of a delicate blush-pink, with an intense carmine crimson blotch surrounded by a zone of white, the column also being of a deep crimson; the spur is pale yellow. It received a 1st Class Certificate at South Kensington in December, 1881.—*Garden hybrid*.

FIG.—*Reichenbachia*, 2nd ser., ii. t. 63, f. 2.

C. BILOBA, *Lindl.*—A beautiful species belonging to the evergreen section, and although known as long ago as 1854, when Dr. (now Sir) J. D. Hooker collected it in Sikkim, it is still rare in collections. It has cylindrical pseudobulbs, and erect many-flowered spikes; the sepals and petals are purplish tinged with yellow-brown, while the lip is purple striped with white.—*India*.

FIG.—*Orchid Album*, viii. t. 378.

C. COLORANS, *Rehb. f.*—This new and beautiful species first flowered with us, and we have to thank the late Professor Reichenbach for identifying it. It belongs to the *C. veratrifolia* section, and has large white showy flowers with a double-toothed spur. The leaves are like those of *C. veratrifolia* in form. It grows in grassy places, which indicates a terrestrial habit. This will make a useful autumn flowering *Calanthe*, as it produces its blossoms during August and September.—*India*.

FIG.—*Orchid Album*, v. t. 218.

C. CURCULIGOIDES, *Lindley*.—This is an extremely rare and beautiful species, which we have not for a long time seen in flower. The leaves are large, evergreen, and plaited. The flower spike is erect, bearing a head of bloom similar to that of *C. veratrifolia*, but the flowers, instead of being white as in that species, are of a beautiful orange yellow, and are produced in summer and autumn.—*Malacca*; *Penang*; *Singapore*; *Java*.

FIG.—*Bot. Reg.*, 1847, t. 8; *Bot. Mag.*, t. 6104; *Breda, Orch. Jac.*, t. 7; *Floral Mag.*, 2 ser., t. 349.

C. DOMINII, *Lindley*.—A good and distinct hybrid, which grows in the same way as *C. Masuca*. The sepals and petals are lilac, the lip deep purple. It is the first of the hybrid Orchids raised in this country, and its production is due to the late Mr. Dominy, who obtained it as a cross between *C. Masuca* and *C. furcata*. It is a fine free-blooming plant. The seeds were obtained in 1854, and the young seedlings were in flower two years later.—*Garden hybrid*.

FIG.—*Bot. Mag.*, t. 5042.

C. DARBLAYANA, *Godefroy*.—This hybrid is of French origin, and is the result of a cross between *C. Regnierii* and *C. vestita oculata gigantea*; flowers pale rose colour, reminding one of a pale variety of *C. Veitchii*.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1889, p. 178.

C. FURCATA, *Bateman*.—A showy evergreen Orchid with ovate oblong deeply plicate leaves, and erect spikes, three feet long, bearing a profusion of creamy white flowers, which last in perfection six weeks; these flowers, which are very freely produced, usually open in June, July, and August, and render it a good plant for exhibitions. It differs from *C. veratrifolia* chiefly in the larger lateral lobes of the lip.—*Philippines; Java*.

C. GIGAS, *Hort. Veitch*.—This noble *Calanthe* was raised by Messrs. J. Veitch & Sons, between *C. Sanderiana gigantea* and *C. vestita gigantea*. It was exhibited on the 17th January, 1893, before the Royal Horticultural Society, and deservedly awarded a 1st Class Certificate. The plant exhibited had one spike about four feet in length; the individual flowers are large and bold in form; sepals and petals white; lip bright rose colour, darker towards the base. This plant reminded us of a giant form of *C. Williamsii*.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, xxvi. 1893, p. 129, f. 24; *The Garden*, xlv 1893, p. 236, t. 926.

C. LABROSA.—See LIMATODES LABROSA.

C. LENTIGINOSA, *Rchb. f.*—A garden hybrid between *Limatodes labrosa* and *C. Veitchii* raised by Mr. Seden, being intermediate between the two parents; flowers white, faintly flushed with pale rose, lip covered with rosy-purple spots. There are two varieties of this plant, one with rose-coloured flowers called *rosea*, and another darker coloured variety called *carminata*.

FIG.—*Veitch's Man. Orch. Pl.*, vi. p. 74 (*C. lentiginosa carminata*).

C. MASUCA, *Lindley*.—A desirable and free-flowering evergreen Orchid, producing its flowers on a spike two feet long. The sepals and petals are of a deep violet colour, and the lip a rich purple. It blooms in June, July, and August, and lasts six weeks in perfection. This is a good plant for exhibition, the colour being very distinct.—*Nepaul; Sikkim; Neilgherries*.

FIG.—*Bot. Reg.*, 1844, t. 37; *Bot. Mag.*, t. 4541; *Wight. Icon.*, iii. t. 918; *Lew. Jard. Fl.*, t. 62; *Moore, Ill. Orch. Pl.*, *Calanthe*, t. 2; *Batm. 2nd Cent. Orch. Pl.*, t. 139; *Orchid Album*, viii. t. 354; *Lindley*, v. t. 198.

SYN.—*Bletia Masuca*.

C. MASUCA GRANDIFLORA, *Williams*.—A very scarce variety, with evergreen foliage, producing gigantic flower spikes from three to four feet high, which continue blooming for three months; sepals and petals deep violet, shading off to lilac; lip very rich deep purple. Its long continuous blooming season makes it valuable.—*India*.

C. MYLESII, *Williams*.—A very handsome hybrid, believed to be a cross between *C. nivalis* and *C. Veitchii*. The flowers are pure white, except at the entrance to the throat, where they are tinged with lemon-yellow.—*Garden hybrid*.

FIG.—*Orchid Album*, ix. t. 402.

C. PLEIOCHROMA, *Rchb. f.*—A rare evergreen species resembling *C. Masuca* in growth; flowers white, having a purplish lip which turns to yellow as it is going off. Blooms in May.—*Japan*.

C. PORPHYREA, *Rchb. f.*—This handsome and distinct hybrid has been raised in the collection of Sir Trevor Lawrence, Bart., at Dorking, and is the result of a cross between *Limatodes labrosa* and *C. vestita rubro-oculata*. We have not yet seen this novelty, but the late Professor Reichenbach described the sepals and petals as being of a most exquisite dazzling purple, while the lip is yellowish marked with small purple spots at the base, and on the anterior part of a fine purple; the spur is ochre-coloured. It flowers during the winter months.—*Garden hybrid*.

C. REGNIERI, *Rchb. f.*—A very charming plant, introduced by M. Regnier, of Paris. The growth of the pseudobulbs and general appearance of the plant resemble those of *C. Turneri*, as do also the flowers, but the lip differs in having the middle lobe shorter, web-shaped, and emarginate, instead of deeply parted, and instead of being white with a pink eye, it is wholly rosy pink, which, contrasting with the white sepals and petals, has a most striking and charming effect. It flowers at the same time as *C. Turneri*.—*Cochin China*.

FIG.—*The Garden*, 1883, xxiv. p. 46; *Lindenia*, ii. t. 91.

C. REGNIERI FAUSTA, *Rchb. f.*—A very fine variety of this novel species, having the deepest and warmest crimson at the base of the lip and on the column of any form of *C. Regnieri* as yet known, the marking on the disk of the lip forming a three-lobed blotch. It has been recently introduced by us.—*Cochin China*.

C. SANDERIANA, *Hort. Sander*.—A very pretty plant in the way of *C. Veitchii*, bearing strong many-flowered spikes; sepals and petals rose-coloured, lip bright rosy crimson, similar in shape to that of *C. Regnieri*. Flowers during the spring months.—*Cochin China*.

C. SANDHURSTIANA, *Gosse*.—A well-marked and very handsome hybrid, raised by Mr. P. H. Gosse, of Sandhurst, Torquay, between *Limatodes rosea* and *C. vestita rubro-oculata*. It has much of the character of *C. Veitchii*, being of the same parentage, but is said to be of stronger growth. The peduncles support long racemes ("forty-one grand flowers") of very beautiful flowers, which are of large size, and of a rich rosy crimson, much deeper than in *C. Veitchii*, and have besides a beautiful eye-spot on the lip. It is one of the darkest-coloured forms of this set of *Calanthes*, and likely to have a great future before it; indeed, Professor Reichenbach called it a "magnificent" and a "glorious" thing, and such it was judged to be when exhibited at South Kensington by Sir Trevor Lawrence, Bart., on December 9th, 1884, when it was awarded a 1st Class Certificate.—*Garden hybrid*.

C. SANGUINARIA, *Rchb. f.*—We have not seen this hybrid, but it is thus described by the late Professor Reichenbach in the *Gardeners' Chronicle*, 1886, xxv. p. 331:—"The outside of the flowers is pale purple, the inside of deepest dazzling blood red, sepals and lip lighter, with numerous deep blood-red dashes and markings."—*Garden hybrid*.

C. SEDENI, *Veitch and Rchb. f.*—A very handsome hybrid, raised in Messrs. Veitch & Sons' establishment by Mr. Seden, and named in compliment to him. It was raised between *C. Veitchii* and *C. vestita rubro-oculata*, and has pseudo-

bulbs resembling those of the latter, and racemes of large flowers, in which the sepals and petals are of a brighter and higher tint of rose than those of the former, and the lip is of the same colour with a very dark purplish blotch at the base surrounded by an area of white.—*Garden hybrid*.

SYX.—*Preptanthe Sedeni*.

C. SIEBOLDI, *Decaisne*.—An elegant evergreen dwarf-growing cool-house species, with broad dark-green plaited leaves, and erect spikes, scarcely taller than the leaves, bearing a loose raceme of large yellow flowers. A distinct and desirable species.—*Japan*.

FIG.—*Rev. Hort.*, 1855, 381, with tab.; *Gartenflora*, t. 635.

C. STEVENSII, *Hort*.—This plant is identical with *C. Regnieri* in habit of growth, and differs in having a white lip with a small rose-coloured blotch at the base.—*Cochin China*.

C. TEXTORI, *Miquel*.—A very distinct plant, in habit of growth resembling *C. veratrifolia*. The flowers also resemble those of that species, the sepals and petals creamy white, washed with violet on the petal and column, and also on the base of the lip, where the calli are orange or brick red. It afterwards changes to ochre-colour, excepting the pale lilac base of the sepals and petals, and the column. It flowers in June.—*Japan*.

C. TURNERI, *Rchb. f.*—A very handsome species with jointed pseudobulbs, producing longer flower spikes and larger flowers, and these in greater quantity than in the older and better known *C. vestita*. The flowers are more compact in shape, the colour being pure white, with a deep rose-coloured eye. A peculiar feature of this plant is that it blooms after the forms of *C. vestita* are over, which makes it all the more valuable.—*Moulmein*; (?) *Java*.

C. TURNERI NIVALIS, *Hort*.—An elegant variety, with pure white flowers, which are in no way different from those of the typical form save in being entirely destitute of the colour on the lip. It flowers in winter, and is especially valuable for wedding bouquets, or any other purpose for which pure white flowers are wanted. It is a late-flowering sort, blooming contemporaneously with *C. Turneri*.—*Burmah*.

C. VEITCHII, *Lindley*.—A beautiful mule raised between *Limalodes rosea* and *Calanthe vestita*, by Mr. Dominy. It is a deciduous plant, and grows like *C. vestita*. The flower spikes are usually from two to three feet high, gracefully arching; and the numerous large blossoms are of a rich rose colour. This has proved to be one of the best and most useful of Orchids for winter decoration. The pseudobulbs are generally from six inches to a foot high, according to their strength. Every grower of Orchids ought to have at least a dozen or more of this fine decorative species for winter blooming. There is a pure white variety of this hybrid named *alba*.—*Garden hybrid*.

FIG.—*Bot. Mag.*, t. 5375; *Batcm. 2nd Cent.*, t. 106; *Floral Mag.*, t. 280; *Jennings, Orch.*, t. 48; *Orchid Album*, i. t. 31; *Gartenflora*, t. 731; *L'Orchidophile*, 1894, p. 141, 1895, p. 149; *Lindenia*, v. t. 217; *The Garden*, 1897, xxxii. p. 12; *Veitch's Man. Orch.*, pl. vi. p. 76.

C. VERATRIFOLIA, *R. Br.*—A noble evergreen species familiar to cultivators. It has broad plicate leaves; and the spikes of flowers, which are delicate white,

frequently attain the height of two or three feet; it blooms freely from May to July, and will continue blooming for two months. The flowers should be kept

free from damp, for if they get wet they are apt to become spotted. This makes one of the finest of exhibition plants; it is a very old species, but no collection should be without it.—*Ceylon; India; Australia.*



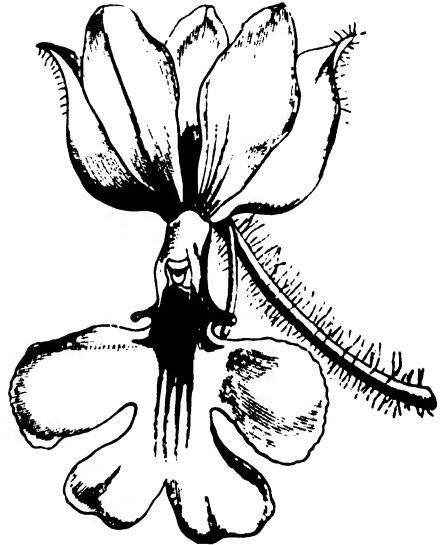
CALANTHE VERATRIFOLIA.

FIG.—*Bot. Reg.*, t. 720; *Griff. Icon.*, t. 283, fig. 4; *Bot. Mag.*, t. 2615; *Loddiges, Bot. Cab.*, t. 958; *Hooker 1st Cent. Orch. Pl.*, t. 93; *Warner's Select Orch. Pl.*, iii. t. 35; *Lindenia*, vi. t. 252; *Veitch's Man. Orch. Pl.*, vi. p. 69.

C. VERATRIFOLIA MACROLOBA, *Rchb. f.*—This is a great improvement on *C. veratrifolia*, having the flowers much larger in size and of great substance, pure white, the basilar lobe exceedingly broad, with the lateral calli much developed; it flowers in May and June.—Imported by us from the *Pacific Islands*.

C. VERATRIFOLIA REGNIERI, *Rchb. f.*—A variety differing from the type in having an ochre-coloured lip.

C. VESTITA, *Lindley*.—A deciduous species of great beauty, and exceedingly valuable for decorative purposes. It has large squarish silvery grey pseudobulbs, broadly lanceolate nervose leaves, which grow up and become matured after the flowering is over, and tall radical scapes of charming creamy white flowers, which in some forms have a coloured spot on the base of the lip. The forms which usually represent the type in collections are those named *luteo-oculata* and *rubro-oculata*, which are more fully described below. No collection should be without the varieties of this plant, which are all such fine subjects for winter blooming, and so useful for cutting for room decoration, that one cannot have too many of them. We have



CALANTHE VESTITA. (Natural size.)

had plants of this species with thirty spikes, and frequently the spikes have borne from twenty to thirty flowers on each, continuing in perfection for three months. The varieties mentioned below are all of a highly ornamental character.—*India; Moulmein.*

FIG.—*Wight Icon.*, v. tt. 1751, 1752; *Past. Fl. Gard.*, i. 106, fig. 72; iii. 38, woodcut of plant.

SYN.—*Preptanthe vestita*; *Cytheria Grifithii*.



CALANTHE VESTITA.

C. VESTITA FOURNIERII, *Rolfe*.—This variety is described by Mr. Rolfe in the *Gardeners' Chronicle*, 1892, xi. p. 488, as follows:—"The flowers range from one and a quarter to one and a half inches across their broadest diameter; they also

vary in colour from pure white to blush and pink to a deep rose pink, with a column and lip of a deeper shade, the latter forms recalling *C. Veitchii* rather than *C. vestita*, with its white sepals and petals."—*Borneo.*

C. VESTITA GRANDIFLORA.—See *C. VESTITA OCLATA GIGANTEA*.

C. VESTITA IGNEO-OCULATA, *Rehb. f.*—This variety has been exhibited by Sir Trevor Lawrence, Bart., M.P., and is said to be quite distinct, the base of the column being purplish, over which is a dazzling flame colour, the blotch at the base of the lip being of the same colour; it is a much stronger grower than *C. vestita rubro-oculata*, and retains its foliage until it flowers.—*Borneo.*

C. VESTITA LUTEO-OCULATA, *Veitch*.—A charming variety, in which the sepals and petals are white, and the lip is of the same colour, with a blotch of yellow in the centre. The flower spikes are produced from October to February, and are very durable; it is nearly equal to *C. v. rubro-oculata* in point of beauty, and very useful for winter decoration.—*Burmah.*

FIG.—*Dot. Mag.*, t. 4671; *Paxton, Mag. Bot.*, xvi. 129, with tab.; *Lem. Jard. FL.*, t. 333; *FL. des Serres*, t. 816; *Id.* tt. 1308—9, fig. 1; *Warner, Scl. Orch. Pl.*, i. t. 29, upper fig.

C. VESTITA OCLATA GIGANTEA, *Rehb. f.*—This is a very showy *Calanthe*, and, like *C. Turneri* and *C. Williamsii*, blooms after the other varieties are over. It is a strong grower, and the foliage remains green during the time of flowering. It yields gracefully arching spikes from three to four feet long, which produce an abundance of large flowers of a soft creamy white colour with a white lip, the base of the column blotched with dazzling fiery red. It blooms in March and April, and lasts in perfection for a long period. This fine variety was exhibited by the late Mr. Spiers, when gardener to Sir Trevor Lawrence, Bart., and received a 1st Class Certificate. We learnt from Mr. Spiers that *C. vestita oculata gigantea*, when in full beauty, bore on one spike as many as thirty expanded flowers, with more to open, whilst the leaves were still green. "The bulb carrying the spike," he wrote, "is now breaking freely, so that it would appear that it will require no rest. I shall simply re-pot it

without disturbing the roots. A curious fact with this variety is that its roots remain plump, and do not die off every year as in the old species."—? *Borneo*.

FIG.—*Orchid Album*, v. t. 211; *Revue Hort. Belge*, 1889, p. 121 (*C. vestita grandiflora*).

SYN.—*C. vestita grandiflora*.

C. VESTITA OWENIANA, *Williams*.—This is certainly the finest hybrid variety known of this popular species. The sepals are white suffused with rose, the petals deeper in colour, lip rich rosy crimson with large white centre. Named after G. D. Owen, Esq., of Rotherham. It was raised in the Victoria and Paradise Nurseries, and is a cross between *C. vestita* and *C. Veitchii*.—*Garden hybrid*.

FIG.—*Orchid Album*, x. t. 464.

C. VESTITA RUBRO-OCULATA, *Veitch*.—A charming free-flowering deciduous Orchid, producing, from October to February, long drooping flower spikes, which are clothed with soft white hairs, and rise from the base of the silvery green pseudobulbs before the latter produce their leaves. The flowers are upwards of two inches across; the sepals and petals delicate white, the lip of the same colour, with a blotch of rich crimson in the centre.—*Moulmein*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 29, lower fig.; *Flore des Serres*, tt. 1308—9, fig. 2; *Veitch's Man. Orch. Pl.*, vi. p. 71.

C. WILLIAMSII, *Moore*.—This handsome plant has been introduced by us, and is very charming. The flowers are from two to two and a half inches in diameter; the dorsal sepal is white, the base of the lateral sepals white on the upper side, and rosy pink on the lower; the petals are white, bordered with rosy pink, and pencilled with the same colour on the lower halves; the lip is entirely of a deep rosy crimson with an intense crimson eye. It flowers during the winter months.—*Cochin China*.

FIG.—*Orchid Album*, iii. t. 134; *Journ. Hort.*, xiii., 1886, p. 47, f. 8.

CAMAROTIS, *Lindley*.

(Tribe Vandaceae, subtribe Sarcanthaceae.)

A small genus of scandent Orchids, having narrow coriaceous leaves, and flowers with a thick fleshy lip, which is hollowed out near the tip somewhat in the form of a slipper. They are included by Bentham and Hooker in the Indian and Australasian genus, *Sarcochilus*.

Culture.—The temperature of the East Indian house is required for their successful culture. They succeed best grown in sphagnum and suspended in baskets, and require care to grow them well. They may be planted either in pots or baskets with moss, but the latter are preferable; and they require a good supply of heat, and moisture over the roots and leaves during the period of growth, but need very little rest, and should never be allowed to shrivel.



CALANTHE WILLIAMSII.

C. PURPUREA, *Lindley*.—A beautiful upright-growing plant, with distichous oblong-linear emarginate leaves three or four inches long. It produces its flower spikes, which are about eight inches long and many-flowered, from the side of the stem; the blossoms are pale rose-coloured, the lip being of a deeper rosy crimson, and they appear from March to May, lasting two or three weeks in beauty. A fine specimen of this species was shown at Chiswick and Regent's Park Exhibitions in 1850. This single plant, on which there were more than a hundred spikes of flowers, was exhibited by the late R. S. Holford, Esq., Tetbury, Gloucestershire. It is to be regretted that we do not see this plant so well cultivated as it was some few years ago, for it is a fine object when grown like Mr. Holford's plant.—*India: Sylhet, Khasya.*

FIG.—*Lindl. Syst. Orch.*, t. 19; *Parton, Mag. Bot.* vii., 25, with tab.



CAMAROTIS PURPUREA.

CATASETUM, *L. C. Richard.*

(Tribe Vandeleae, subtribe Stanhopieae.)

A genus of very remarkable Orchids, with short stem-like pseudobulbs, large plicate leaves, and erect or pendulous spikes of quaint-looking polygamo-trimorphous flowers, often large, but seldom very attractive in character. There are nearly forty known species from Tropical America and Mexico, many of which are in cultivation, but they can scarcely be regarded as favourites with Orchid-growers. The separation of the sexes gives rise to flowers which have been taken to belong to totally distinct genera, *e.g.*, *Monachanthus* and *Myanthus*.

Culture.—The *Catasetums* thrive best in the *Cattleya* house. They should be potted in a compost of peat with good drainage, and we have found them succeed best in baskets suspended from the roof. They should not receive too much water when growing, and when the growth is complete just sufficient should be given to keep them from shrivelling.

C. ATRATUM, *Lindley*.—This interesting species bears a long curved raceme of flowers with ovate acute sepals and petals. Flowers green outside, shaded

and spotted with purple inside; lip green, fringed with a yellow recurved flap at the end. This species appears to have been introduced in the early half of this century. A specimen was exhibited by Major-General E. S. Berkeley at the Temple Show on May 28th, 1891, which had been received from Rio de Janeiro.—*Brazil*.

FIG.—*Orchid Album*, x. t. 480.

C. BUNGEROTHI, *N. E. Brown*.—A most distinct and very handsome species of *Catasetum*, introduced from Equatorial America by the Compagnie Continentale d'Horticulture (*Lindenia*, ii. t. 57). The plant has stout fusiform pseudobulbs eight to nine inches long, which bear several acutely lanceolate plaited deep-green leaves, which leave on the older ones the annular scars, that indicated the point to which they had been attached. The flower scape, which bears many-flowered racemes, springs from the base of the stems, and the flowers, which are four inches across, are very attractive on account of their breadth and purity of colour. The sepals are two inches long, and the smaller petals are lanceolate, very acute, radiating in a semicircle, so that they all stand above the lip, which is large (two and a half inches across), transversely-oblong, deeply concave, the apex bidentate, and the base shortly and bluntly spurred. The



CATASETUM BUNGEROTHI.

column is obtuse, incurved white, having at its base a pair of thick white horn-like cirrhi. The large size of the flowers, and their pure whiteness in every part, gives the plant a very attractive appearance.—*Ecuador*.

FIG.—*Lindenia*, ii. t. 57; *Reichenbachia*, ii. t. 90; *Journ. of Hort.*, xiii. 1886, p. 563, f. 83; *Gard. Chron.* 3 ser., i, 1887, p. 142, f. 32; *Bot. Mag.*, (1888) t. 6998; *Orchid Album*, viii. t. 352; *Garden*, xxxiii. 1888, p. 388.

C. BUNGEROTHI AUREUM, *Linden et Rodigas*.—A very distinct variety with yellow flowers.

FIG.—*Lindenia*, iii. t. 116.

C. BUNGEROTHI POTTSIANUM, *Linden et Rodigas*.—This variety differs from the type in having the two upper petals spotted with carmine, named in honour of the late Arthur Potts, Esq., of Chester.

FIG.—*Lindenia*, iii. t. 104.

C. CHRISTIANUM, *Rchb. f.*—A very distinct and curious species, first flowered by Thos. Christy, Esq., F.L.S., of Sydenham. It has stout fusiform stems, lanceolate-lorate plaited leaves, and produces strong erect flower spikes containing about a dozen flowers, the sepals and petals of which are of a dull chocolate brown, the lip and column being of a bright green; it blossoms during the autumn months.—*Brazil*.

FIG.—*Orchid Album*, ii. t. 83.

C. CLAVERINGII.—See *C. MACROCARPUM*.

C. DECIPIENS, *Rchb. f.*—Inflorescence pendent; sepals and petals brownish purple, spotted with a darker tint of the same colour; lip cup-shaped, yellow outside, light brown inside, column white furnished with two long spurs.—*Venezuela*.

FIG.—*Lindenia*, iii. t. 144.

C. DISCOLOR, *Lindley*.—An old species recently flowered by the Compagnie Continentale d'Horticulture, Gand. Pseudobulbs narrow, tapering, spikes erect, produced from the base, sepals and petals greenish; lip cup-shaped, yellow, the interior hairy and lined with brown, and having two purplish lateral fringes.—*Pernambuco*.

FIG.—*Lindenia*, i. t. 38.

C. GALERITUM, *Rchb. f.*—This species is allied to *C. atratum*, *Lindley*. Pseudobulbs about four inches long, producing pendent spikes of yellowish green flowers; sepals and petals transversely marked with purple brown spots; lip slipper-shaped, yellowish green outside, marked with purplish brown inside, ochre-coloured at the base, purplish brown towards the margins.—*South America*.

FIG.—*Lindenia*, ii. t. 67.

C. LONGIFOLIUM, *Lindley*.—A handsome species discovered by Sir Robert Schomburgk in 1836 growing on the stems of the *Moriche* or *Ita* palm in British Guiana. Pseudobulbs fusiform, about nine inches long; leaves linear-ligulate deep green, about eighteen inches long; sepals and petals broadly oblong, turned backwards, greenish yellow, tipped with crimson; lip helmet-shaped, having a fringed membrane under the limb rich yellow, tipped with deep lake; this species appears to succeed best on a block of wood.—*Demerara*.

FIG.—*Sertum Orchidaceum*, t. 31; *Ref. Bot.*, t. 32; *Bot. Mag.*, t. 3019; *Orchid Album*, x. t. 456; *Hook. First Cent.*, t. 52.

SYN.—*Monochanthus longifolius*.

C. MACROCARPUM, *Richard*.—This is a grand Orchid, and was communicated to us by W. Macdonald, Esq., of Perth, who flowered it in 1884; but in common with others of the genus it has not received much attention, though very remarkable in structure. The flowers are about four inches in diameter; sepals and petals broad, pale yellowish green, densely spotted with purplish brown, reminding one of those of *Paphinia grandis*, lip deep orange yellow.

densely spotted with brown, green on the lower portion of the outside; flowers in June. There are many varieties of this plant.—*Tropical America, east of the Andes.*

FIG.—*Bot. Mag.*, t. 2259; *Id.*, t. 3329 (*tridentatum*); *Bot. Reg.*, t. 840; *Hook. Ex. Fl.*, tt. 91—2; *Lodd. Bot. Cab.*, t. 1344 (*Claveringii*); *L'Illustration Horticole*, xxxiii. t. 569.

SYN.—*C. tridentatum*; *C. Claveringii*.

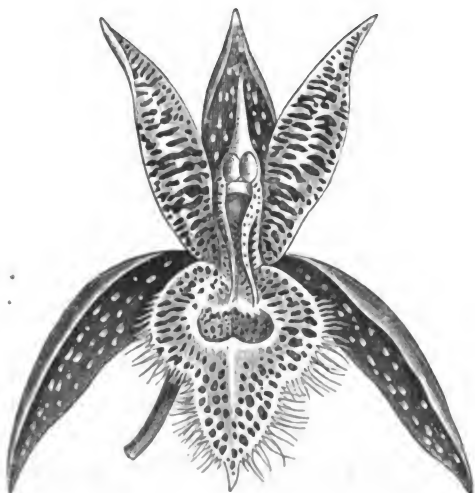
C. MACROCARPUM CHRYSANTHUM, *Linden et Rodigas*.—This variety was first flowered by Madame E. Gibeze, of Sens, France, in 1888; it differs from the type in having the perianth bright yellow instead of greenish yellow.—*South America.*

FIG.—*Lindenia*, v. t. 197.

C. PILEATUM, *Rchb. f.*—According to the late Professor Reichenbach, this is a curious large-flowered species, with a broad white lip, reminding one of *Mormodes luxatum*, "sepals narrow, large, ligulate acute, light reddish. I am, however, by no means sure whether the colour is natural or a consequence of withering. Petals broad, oblong-acute, white; lip a wide nearly triangular obtusangled expansion, descending at the base into a blunt cone. Column white with a very long apicular beak, and two well-developed cirrhi."—*Gard. Chron.* 1886, xxvi. p. 616.

C. PULCHRUM, *N. E. Brown*.—Pseudobulbs fusiform, inflorescence pendent, sepals and petals yellow, transversely barred and spotted with reddish brown; lip ochre yellow, sack-shaped.—*Brazil.*

FIG.—*Lindenia*, iii. t. 120.



CATASETUM SACCATUM.

C. RODIGASIANUM, *Rolfe*.—

A distinct and pretty species with thick fusiform pseudobulbs and sub-erect spikes one foot long; flowers three inches across; sepals green outside, spotted with dark purple brown, inside almost wholly purple brown; petals green inside and outside spotted with dark purple brown; lip greenish yellow covered with purple brown spots. Flowers produced in summer.—*Brazil.*

FIG.—*Lindenia*, vi. t. 259.

C. SACCATUM, *Lindley*.—An old and well-known species described as far back as 1840.

Peduncle twelve to fifteen inches high, bearing seven to eight flowers about four inches in diameter; sepals lanceolate, equal, spreading, inside deep purple



CATASETUM
(From the *Garden*)



SCURRA.
(*Chronicle.*)

spotted with yellow, outside tinged with yellow; petals same size and form, but more spotted with yellow; lip irregular in form, rich yellow, thickly spotted with crimson.—*British Guiana*.

FIG.—*Sertum Orch.*, t. 41; *Lindenia*, vi. t. 269.

C. SCURRA, *Rchb. f.*—This curious plant is well worthy of cultivation, owing to its compactness of habit, and the elegance and perfume of its flowers. The pseudobulbs are about an inch and a half high, ovate acute, becoming much wrinkled, the leaves about six inches long, oblong-lanceolate, and of a lively green, and the flowers five or more together in a drooping raceme. The flowers are of a pale straw colour or waxy white with green veins, and they emit a most grateful perfume, which has been compared to that of lemons or roses. The lip is very peculiar in structure; it is trifid, the side lobes erect with bent borders, rhomboid and denticulate, the middle lobe with a short broad linear stalk, expanded into a sub-reniform blade with crisped and toothletted edges.—*Demerari; Panama*.

FIG.—*Gard. Chron.*, N.S., vii. 304, figs. 50, 51.

C. TIGRINUM, *Rchb. f.*—A pretty species with white flowers spotted with rosy purple, inflorescence pendent, many-flowered; first flowered by Mr. Dorey, gardener to W. Williams, Esq., Sugnall Hall, Staffs.—*Brazil*.

FIG.—*Lindenia*, i. t. 27.

C. TRIDENTATUM.—See *CATASETUM MACROCARPUM*.

CATTLEYA, *Lindley*.

(Tribe *Epilendraceae*, subtribe *Laeliinae*.)

The species of this popular genus rank among our finest Orchids; they are general favourites, and we are glad to find that they are now being extensively introduced and cultivated, and that new species and varieties are being obtained through the unflinching energy of our hybridisers and collectors. The pseudobulbs vary considerably from the small ovate pseudobulbs of *C. citrina* to the elongated and thickened club-shaped stems of *C. labiata*, *Trianae*, *Mossiae*, and *Mendellii*, and the dark massive evergreen foliage when in a healthy condition, together with the compact habit of growth, renders the plants peculiarly attractive. Some of the sorts have only a single leaf at the top of each stem, while others have two, and in some instances three. The flowers are large, elegant in form, and scarcely surpassed in this brilliant family for their sparkling richness and depth of colour, the most frequent tints of which are violet, rose, crimson, magenta, white, yellow, mauve, and purple, with their intermediate shades. The flower scape, which is

enclosed in a sheath, rises from the top of the stem, and a single spike sometimes contains as many as nine perfect flowers—we have seen as many as thirty.

The whole of the *Cattleyas* are on scientific grounds referred by Prof. Reichenbach to *Epidendrum*; but it is not necessary to overload our pages by quoting this synonymy.

Culture.—The plants generally begin to make their growth for the next season as soon as the flowering is over; but some of them, such as *C. Walkeriana*, *C. violacea*, *C. superba*, and several others, flower while making their growth. We have found *Cattleyas* thrive best in pots and baskets, with the exception of *C. Walkeriana*, *C. marginata*, *C. citrina*, *C. Aclandiae*, *C. superba*, and other small growing kinds, which grow best on blocks with a small quantity of moss, or in small pans with the same compost as for pots. If the accommodation is limited, all the kinds may be grown on blocks, but they will then require more attention, and seldom thrive so well as they do in pots or baskets. They require a good depth of drainage; so that the pots or pans should be filled about half full of potsherds, and these covered with a layer of moss, the remaining space being filled up with peat, a few lumps of charcoal being added, taking care always to have the plants elevated well above the rim.

We grow nearly all the *Cattleyas* in the Brazilian house, and are accustomed to give them a good supply of heat and atmospheric moisture, and not too much water at the roots while they are growing. Water applied to the roots about three times a week will be sufficient for those in the most vigorous state of growth; too much water is apt to cause the bulbs to rot. We find it a good plan, while the *Cattleyas* are in vigorous growth during the summer months, to frequently syringe between the pots on every fine warm day. So long as the soil remains moist, no water is required; and when the surface of the soil becomes dry, water should be applied to the roots—not to the bulbs, as it is apt to injure them greatly. When the plants have made their growth they should be allowed to rest, and be kept rather dry, giving them just sufficient water to prevent their shrivelling.

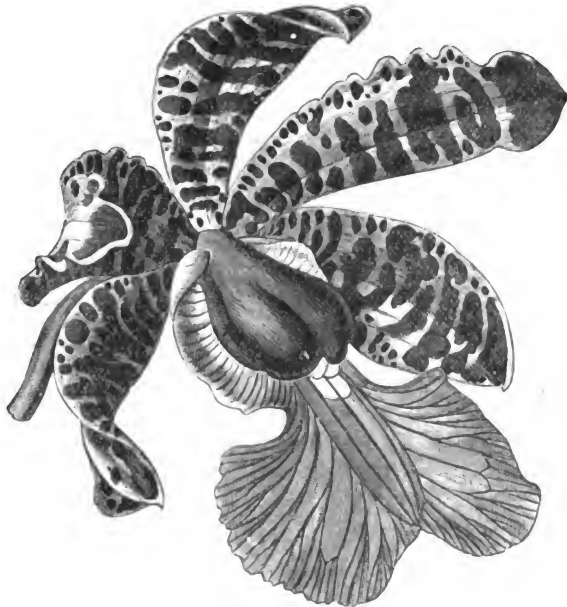
Cattleyas require all the light possible, therefore a thin shading should be used; even this need only be lowered when the sun is shining

during the hottest part of the day, as a little morning or afternoon sun, say up till eight o'clock in the morning and after four or five in the afternoon, in the summer time, will be found very beneficial to them; also keep the plants as near the light as possible, and give them plenty of ventilation during fine weather, but avoid cold draughts.

A season of rest is very advantageous to the plants, causing them to flower more freely and to grow more vigorously afterwards. Those plants which are growing on blocks will require a good supply of water at their roots every day during summer, and twice or three times a week in winter.

Cattleyas require to be kept perfectly clean and free from insects. They are subject to the white scale, which should never be allowed to establish itself, as it is then difficult to remove, and the plants are in great danger of being injured. In order to keep the plants free, they should be carefully looked over every three or four weeks, and sponged with clean water of the same temperature as that of the house. They are also subject to the attacks of thrips; this pest should be kept down by steaming or fumigating with tobacco paper. They are propagated by dividing the plants.

The following list comprises the most beautiful and valuable species and varieties of this splendid genus; and a collection which embraces these will seldom if ever be without one or more of them in flower.



CATTLEYA ACLANDIAE.

C. ACLANDIAE, *Lindley*.—A charming Orchid, of dwarf habit, the terete striated stems seldom being above six inches high, and crowned by a pair of fleshy oblong elliptical leaves. The flowers are large, olive-green heavily

blotched with dark purple, the lip magenta purple, with darker veins, and the exposed column dark purple. It flowers in June or July, and remains long in perfection. There are some fine specimens of this plant in the country. It is a species apparently subject to much variation, some plants proving very free-flowering, though it is generally rather shy-blooming and difficult to cultivate, and is best grown in a small basket, or on a block, and as near the glass as possible.—*Brazil*.

FIG.—*Bot. Reg.* 1840, t. 48 ; *Bot. Mag.*, t. 5039 ; *Parton Mag. Bot.*, ix. 1, with tab. ; *Fl. des Serres*, t. 674 ; *Orchid Album*, ii. t. 69 ; *Ill. Hort.*, t. 565 ; *Bateman, 2nd Cent.*, t. 119 ; *Lindenia*, viii. t. 346 ; *Veitch's Man. Orch. Pl.*, ii. p. 29.

C. ALBERTI, *Godefroy*.—A hybrid obtained by M. Perrenoud of Paris, between *C. intermedia* and *C. superba*. The flowers are large, of a clear rose colour marked with darker longitudinal lines ; the lip is three-lobed, the free portion being of a deep rosy purple.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1890, p. 321.

C. ALEXANDRAE, *L. Lind. et Rolfe*.—This species is allied to *C. Leopoldii*, but differs by the remarkable length of its peduncles, which measure from 15 to 18 inches in length. The pseudobulbs are cylindrical and from 12 to 21 inches long. Sepals and petals about 2 inches long and $\frac{1}{2}$ -inch broad, of a clear green, spotted with rich brown and tinted with violet at the margin, lip rosy violet ; blooms in autumn.—*Brazil*.

C. ALEXANDRAE ELEGANS, *Rolfe*.—This variety has larger flowers than the type. The sepals and petals are of a rosy purple with purple lines, while the lip is of a rich purple.—*Brazil*.

FIG.—*Lindenia*, viii. t. 358.

C. ALEXANDRAE TENEBROSA, *Rolfe*.—A variety with smaller flowers than the preceding one. The sepals and petals are of a rich brown marked with darker lines of the same colour ; the lip is intense purple rose.—*Brazil*.

FIG.—*Lindenia*, viii. t. 357.

C. AMABILIS, *Hort*.—A magnificent free-flowering species, growing about eighteen inches high, making two growths in one year, and blooming from the one that is formed in spring, the spikes producing from three to five blossoms, which remain about four weeks in perfection. The sepals and petals are delicate pink, the lip is large, of the richest crimson. Undoubtedly the finest of the group represented by *C. intermedia*, which it closely resembles ; it blooms during the summer months, and makes a fine exhibition plant. Very rare.—*Brazil*.

C. AMETHYSTINA.—See *CATTLEYA INTERMEDIA*.

C. AMETHYSTOGLOSSA, *Linden et Rehb. f.*—A beautiful and distinct species, growing from two to three feet high, in the way of *C. Leopoldii*, with terete stems, slightly thickened upwards, and two oblong-lanceolate leaves on the top of the stems, from between which are produced spikes with seven to ten flowers, each measuring more than five inches across ; indeed, we have had them

when very strong with as many as twenty-seven flowers. The sepals and petals are suffused with light rose and spotted with rich magenta purple, while the lip is deep magenta purple. It blooms in March, April and May, and will last five weeks in perfection. There have been a good many plants of this beautiful species imported during the last few years, and many varieties have bloomed; indeed, it is seldom that two plants flower exactly alike. See also *C. guttata Prinzii*.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 2; *Bot. Mag.*, t. 5683; *Ill. Hort.*, t. 538; *Rev. Hort.*, 1869, 212, with tab.; *Reichenbachia* ii., series i. t. 47; *Xenia Orch.*, ii. t. 172; *L'Orchidophile*, 1892, p. 369; *The Garden*, 1893, xliii. p. 54.

SYN.—*Epidendrum elatior Prinzii, Rehb. f.*

C. AMETHYSTOGLOSSA SULPHUREA, *Hort.*—A very pretty variety of this fine Orchid, resembling in every respect the plant figured in Mr. Warner's book above quoted as *C. amethystoglossa*, except that the ground colour of the flower is of a pure lemon colour, the spotting being as in the type; the lip is broad, and of a rich cream colour.—*Brazil*.

FIG.—*Gard. Chron.*, 1866, 315, with fig. (?)

C. AUREA.—See *CATTLEYA DOWIANA AUREA*.

C. AUTUMNALIS.—See *CATTLEYA BOWRINGIANA*.

C. BALLANTINIANA, *Rehb. f.*—A hybrid between *C. gigas* and *C. Trianae*, raised by Messrs. Sander and Co., and named after Mr. Ballantine, gardener to Baron Sir J. H. W. Schröder, of "The Dell," Staines. The sepals and petals are of a delicate rose colour; the lip is margined with the same colour at the sides, while the basal margin is a deep purple, the inner portion of the lip is pure white and the throat yellow.—*Garden hybrid*.

FIG.—*Reichenbachia*, ii. t. 91.

C. BATALINI, *Sander et Kränzlin*.—This remarkable species is described as intermediate between *C. Aclandiae*, *C. bicolor*, and *C. Schilleriana*. The pseudobulbs are 15 inches long and $\frac{1}{2}$ inch thick. Flowers pale purple from 2 to 2½ inches across, petals deeply coloured. The lateral lobes of the lip are whitish suffused with rose, while the mid-lobe is violet with a white border. It was exhibited at the Drill Hall on July 12th, 1892, by Messrs. Sander and Co. Named in honour of Professor Batalin, the Director of the Imperial Botanic Gardens, St. Petersburg.—*Brazil*.

C. BICOLOR, *Lindley*.—A beautiful and free-flowering Orchid of vigorous growth, with slender terete striated stems eighteen inches to two feet high, diphyllous, the leaves oblong-lanceolate, and the flowers on a terminal peduncle. The sepals and petals are pale green, with a lurid coppery brown tinge, the oblong-cuneate lip rich rose purple, remarkable from the absence of the side lobes, the exposed column being pink. It blooms in September, producing as many as eight or ten flowers on a spike, and remaining a long time in perfection. There were two beautiful varieties of this plant in the collection of the late T. Dawson, Esq., of Meadow Bank.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4909; *Dict. of Gard.*, 281, fig. 384; *Sertum Orch.*, t. 5; *Lem. Jard. Fl.*, t. 379; *Journ. of Hort.*, xiv. 1887, p. 177, f. 30; *Orchid Album*, vii. t. 318; *Lindleya*, vii. t. 292; *L'Orchidophile*, 1891, p. 17.

C. BICOLOR MEASURESIANA, *Williams*.—This beautiful variety resembles the type in its habit of growth and mode of flowering. The principal difference lies in the present plant having a broad white margin around the front of the lip. Flowers in autumn.—*Brazil*.

FIG.—*Orchid Album*, viii. t. 357.

C. BICOLOR WRIGLEYANA, *Rehb. f.*—A distinct variety, flowered by E. G. Wrigley, Esq., Howick House, Preston, in 1885; the sepals and petals are grey-green and the lip dark purple.—*Brazil*.

C. BLESENSIS.—A very beautiful hybrid *Cattleya*, raised by M. Maron, gardener to M. Darblay, Corbeil. It is the result of a cross between *C. pumila* and *C. Loddigesii*, and in habit of growth is intermediate between the two parents; it is named after Blois, a town in France. The pseudobulbs are fusiform, from 5 to 7 inches high, bearing two ovate-oblong leaves; spike terminal, bearing from two to four flowers, which measure 4 inches across. The sepals and petals are of a very delicate shade of rosy-purple, the front of the lip is of a very rich deep magenta-purple, this colour being carried round the undulated edges of the side lobes as far as their point of contact, as well as far back into the throat, which is white in the interior, having two pale sulphur-yellow eye-like areas at the entrance.—*Garden hybrid*.

FIG.—*Revue Hort.*, 1893, p. 424 (plate).

C. BLUNTII, *Low*.—This is truly a most chaste and beautiful *Cattleya*. It was first flowered by the late John Day, Esq., Tottenham, and was named after the collector, Mr. H. Blunt. This original plant was purchased by us from Mr. Day, and we have never since seen a *Cattleya* so chaste and beautiful belonging to the same section, although several pale forms of *C. Mendellii* have been put forward as being the same plant. In its stems and leaves, as well as in the habit of growth, it resembles *C. Mendellii*, and the flowers are also similar in form to those of that species. The sepals and petals are pure white, and the lip white, with a yellow stain in the throat; it flowers during the summer months.—*U.S. Colombia*.

C. BOISSIERI, *Hort*.—In this handsome species the leaves are of a short broad oblong form, and the flowers have soft rosy-lilac sepals and petals, and a broad lip with a beautiful curving yellow blotch extending half-way down and nearly across it.—*New Grenada*.

C. BOOTHIANA.—See *CATTLEYA LOBATA*.

C. BOWRINGIANA, *Veitch*.—This beautiful autumn-flowering *Cattleya* was introduced in 1884 by Messrs. J. Veitch & Sons, of Chelsea. It is closely allied to *C. Skinnerii*, but we have found it a much freer grower and flowerer than that species. It is stated to have been found on cliffs by the side of streams near to waterfalls. In consequence, in its native habitat it receives a large amount of moisture. In cultivation it has been found necessary to give this plant an abundant supply of moisture, together with a free circulation of air. The colour and shape of the flowers are similar to those of *C. Skinnerii*. The

bulbs are also similar, but differ in being much swollen at the base.—*British Honduras*.

FIG.—*Orchid Album*, vii. t. 323; *Reichenbachia*, 2nd series, i. t. 2; *Veitch's Man. Orch. Pl.*, ii. pp. 31, 32; *Journ. of Hort.*, 1886, xii. p. 397, ff. 71, 72; *Gardening World*, 1887, iv. p. 197; *Revue Hort.*, 1890, p. 300 (plate) (var. *violacea*).

SYN.—*C. autumnalis* Hort.

C. BRABANTIAE, *Veitch*.—This is one of Messrs. Veitch and Sons' hybrids, the result of a cross between *C. Aclandiae* and *C. Loddigensis*, and requires the same treatment as its parents, which are both natives of the warmer parts of Brazil. It is a sturdy dwarf-growing variety, with terete stems, a pair of ligulate-oblong leaves, and comparatively large flowers, in which the rose-coloured sepals and petals are thickly blotched with blackish purple, and the lip has its lateral lobes white, curved over the broad rose-coloured column, and its front lobe retusely reniform, of a magenta-purple. It was first exhibited at the Brussels International Show in 1864.—*Garden hybrid*.

FIG.—*Floral Mag.* t. 360.

C. BRYMERIANA, *Rehb. f.*—This is a fine and distinct novelty, introduced by Messrs. Low & Co., and named in honour of W. E. Brymer, Esq., Ilington House, Dorchester. It is similar in growth to a short-bulbed *Laelia elegans*, the flowers being medium sized; the sepals and petals are of a pale rosy purple, and the lip has a narrow closely-folded tubular base nearly two inches long, yellowish below, and pale lilac with the front part veiny magenta-purple above, and a clear yellow throat cut off abruptly in front, the anterior lobe is transversely roundish oblong, emarginate, and of a rich magenta-purple; this anterior lobe is remarkable for its squareness.—*Brazil*.

FIG.—*Orchid Album*, iv. t. 184; *Lindenia*, viii. t. 343.

C. BRYSIANA.—See *LAELIA BRYSIANA*.

C. BULBOSA.—See *CATTLEYA WALKERIANA*.

C. CALUMMATA, *André*.—A very beautiful and distinct hybrid, raised by M. Bleu of Paris, between *C. amethystina* and *C. Aclandiae*. The stems are stronger than those of *C. Aclandiae*. The sepals and petals are bluish white, spotted with violet-purple, as in *C. amethystoglossa*, and the lip is a rich violet-purple in the centre, passing to a lighter tint of the same colour on either side. This plant is said to flower twice a year.—*Garden hybrid*.

FIG.—*Revue Hort.*, 1883, 564, with tab.; *Orchid Album*, iv. t. 166; *Gard. Chron.*, n.s., xxvi. 1886, p. 525, f. 104.

C. CANDIDA, *Hort.*—A desirable free-growing species, allied to *C. intermedia*. It grows about a foot high, making two growths in a year, and blooms from both, producing three or four flowers on a spike; the sepals and petals are white, delicately shaded with pink, and the lip is of the same colour with a dash of yellow in the centre. It flowers from July to November, and lasts three or four weeks in good condition, if the flowers are kept free from damp. This plant has become very rare in cultivation.—*Brazil*.

C. CASSANDRA, Rolfe.—This hybrid *Cattleya* was described in the *Gardeners' Chronicle*, 1888, iv., p. 596, by Mr. Rolfe, as follows:—"This is another of Mr. Seden's hybrids, for which I am indebted to Messrs. Veitch & Sons, of Chelsea, from whom I have just received a three-flowered peduncle. It was raised from *Cattleya Loddigesii*, fertilised with the pollen of one of the forms of *Laelia elegans*, itself a *Laelio-Cattleya*, that is, a natural hybrid between the two genera. At present the plant is said to have a stoutish rhizome, as in *L. elegans*, with seven sub-clavate or sub-cylindrical pseudobulbs, seven to nine inches long, and diphyllous. Leaves oval oblong, spreading, five to six inches long. The flowers measure three and a half inches across, the sepals are acute, the petals twice as broad and more obtuse; all of a delicate rosy-lilac. The lip is very strongly three-lobed, and has much of the appearance of the mother plant; the side lobes very large, and the front one constricted at the base into a very short and broad claw, broadly rounded in front, and very much crisped. In colour this front lobe is bright amethyst-purple, while the side lobes are nearly white; the exceptions being a little rosy-lilac at their apex, and more faintly along the margin behind; a little rosy-purple running down the centre of the lip, principally along the minute keels; and the radiating veins of a very pale yellow. The column is much like that of *C. Loddigesii* in shape, white, with a little rose down the face. Except the front lobe of the lip the flower is very delicately coloured."—*Garden hybrid*.

C. CHAMBERLAINIANA, Rehb. f.—This new hybrid *Cattleya* is a cross between *C. guttata Leopoldii* and *C. Dowiana*, and is named in honour of the Right Hon. Joseph Chamberlain, M.P. The growth of the plant resembles that of *C. Leopoldii*, but is considerably dwarfer. The flowers have brownish purple sepals, rich purple petals, and a lip like *C. Leopoldii* of a rich purple-magenta; it flowers in the latter part of the summer.—*Garden hybrid*.

C. CHOCOENSIS, Linden et André.—A very handsome but variable species, with oblong clavate stems, solitary oblong cuneate emarginate leaves, and large fragrant flowers, which are not expanded like the majority of *Cattleyas*, but somewhat campanulate in shape; the sepals and petals are large and broad, fringed at the edges, pure white, the lip yellow, stained in front with rich magenta-purple. The different varieties of this species appear to vary considerably in their colour and markings; thus in some the yellow is much reduced, and the purple tint predominates, even extending over the lateral lobes. The half-closed flowers, however, are always characteristic.—*New Grenada; Choco*.

FIG.—*Ill. Hort.*, 3 ser., t. 120.

C. CITRINA, Lindley.—A beautiful dwarf plant, with small ovate pseudobulbs, which bear a pair of ligulate-lanceolate glaucous leaves. The flowers, which are large for the size of the plant, are bright yellow, fragrant, and produced from the top of the bulb, sometimes in pairs; it blooms from May to August, and lasts three or four weeks in perfection. This is best grown on a block of wood; the plant should be tied to the block, with the leaves hanging downwards, as it is found growing beneath the branches of trees in

its native country. It succeeds best in the Mexican house, as near the glass as possible.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3742; *Pescatorea*, t. 9; *Flore des Serres*, t. 1689; *Warner, Sel. Orch. Pl.*, iii. t. 18; *Hook. 1st Cent.*, t. 34; *Reichenbachia*, i. t. 20; *Journ. of Hort.*, xv. 1887, p. 565, f. 66; *Vitch's Man. Orch. Pl.*, ii. p. 33; *Orchid Album*, x. t. 469.

C. CITRINO-INTERMEDIA, Rolfe.—

We consider this a wonderful hybrid. It was raised in the collection of the late Dr. Harris, Lamberhurst, and is the result of a cross between *C. citrina* and *C. intermedia*; it first flowered in November, 1887, and is described by Mr. Rolfe in the *Gardeners' Chronicle*, 1888, iii. p. 73, as follows:—"It would hardly be correct to describe the hybrid as intermediate between the two parents, in habit at least, for it could not well accomplish this feat without growing sideways, yet it combines the characters of both in a very remarkable way. The plant is erect, and has fine pseudobulbs; the first ovoid, com-



CATTLEYA CITRINA.

pressed, and 1 in. long, the others gradually increasing in size, the fifth being $4\frac{1}{2}$ ins. long by 1 in. broad and 10 lines thick, with a slender attenuate base; thus the dimensions are almost intermediate between the two parents, coupled with the erect habit of *C. intermedia*. The flowering bulb bears three leaves seven inches long by one and three-eighths of an inch broad, lanceolate linear and sub-obtuse; the others have but two leaves, which are somewhat smaller. Here, too, the dimensions are almost intermediate, but the three-leaved character clearly comes from *C. citrina*. On coming to the inflorescence, the habit is precisely that of the male parent, for it arches over from the apex of the pseudobulb, the flower being exactly pendulous and the segment connivent. The peduncle is two and a half inches long, and bears at its apex five acute broad-based bracts, a quarter of an inch long. It was originally two-flowered,

but fearing the plant might not be sufficiently strong to allow of both flowers being fully developed, one bud was removed at an early stage, the peduncle being carried forward one-eighth of an inch above the flower, which is borne in the axil of the next bract. The pedicel is two and a quarter inches long, thickened and yellowish green above, whitish below, the whole with a few faint purplish markings; the segments narrower and more acute than in *C. citrina*, and of a dull creamy-white, inclining to flesh white, the petals being a little broader than the sepals. The lip is three-lobed, and equalling the segments in length, the side lobes being large, rounded and obtuse, the colour flesh-tint, becoming pale purple at the apex; the front lobe rounded, nearly truncate and minutely apiculate, the margin crisped, undulate, and the colour pale rosy-purple, a fainter shade of the same extending back along the central keels to near the base. Thus the flower has the general habit of *C. citrina*, with the colour approaching that of *C. intermedia*, the shape of the segments and lip being tolerably intermediate between the two. The colours seem to have somewhat neutralised each other, and have not come out as brilliant as could be wished."—*Garden hybrid*.

C. CRISPA, Lindley.—A splendid free-growing Orchid with one-leaved sub-cylindraccous angulate stems about a foot and a half high, flowering in July, August, and September; the flowers have the sepals and petals bluish white,



CATTELEYA CRISPA.

and the lip white, with a rich crimson stain on the front lobe, which is beautifully veined. A single spike frequently produces four to seven flowers, which continue in perfection for two or three weeks. This is a fine plant for exhibition

in July and August. The colour of the flower is remarkably attractive, and it always produces a good effect in a collection.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1172; *Bot. Mag.*, t. 3910; *Part. Mag. Bot.*, v. p. 5, with tab.; *Belg. Hort.*, iv. t. 11; *Hook. 1st Cent.*, t. 32; *Veitch's Man. Orch. Pl.*, ii. p. 64.

SYN.—*Laelia crispata*.

C. CRISPA BUCHANANIANA, *Williams et Moore*.—We have here undoubtedly the finest form of this grand Orchid; it is named in honour of J. Buchanan, Esq., of Oswald Road, Edinburgh, a great enthusiast among Orchids. In habit of growth it resembles the type, but the flowers are much larger, and the lip, instead of being pointed and much curled, is very broad and well opened, of a rich purplish crimson.—*Brazil*.

FIG.—*Orchid Album*, ii. t. 81.

C. CRISPA DELICATISSIMA, *Williams*.—This chaste variety was first flowered by Sir T. Lawrence, Bart., but since then several plants have passed into our hands. It resembles the type in every respect, except that the flowers are pure white, save a few faint markings of rose on the lip which are almost invisible. A very unique plant, flowering in July and August.—*Brazil*.

FIG.—*Orchid Album*, ix. t. 424.

C. CRISPA PURPUREA, *Williams*.—A superb variety of vigorous habit, producing very large flowers, which have the sepals and petals white with a faint tinge of blush, and the much broader blunter lip richly blotched with deep purple breaking out into radiating lines towards the margin.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 9.

C. CRISPA SUPERBA, *Hort*.—A magnificent variety, the flowers of which are larger than those of the type, and have the sepals and petals pure white, and the lip rich crimson, beautifully fringed. We consider this, when true, to be one of the finest *Cattleyas* in cultivation, but many are sold under the name which have no claim to it. It blooms in July and August, and will last from two to three weeks in beauty.—*Brazil*.

FIG.—*Journ of Hort.*, xxv. 1892, p. 209, f. 29.

C. CROCATA.—See CATTLEYA ELDORADO VIRGINALIS.

C. DAWSONI, *Warner*.—This very fine and rare *Cattleya*, named in honour of the late T. Dawson, Esq., of Meadow Bank, in whose splendid collection it first flowered, appears as if it were an intermediate form between *C. labiata* and *C. Mossiae*. It grows a foot or more high, the leaves being of a dark green colour, and of unusual thickness. The very large flowers are produced in clusters of three or four, and are as much as six or seven inches in diameter; the sepals and petals delicate purplish rose; the lip large, its upper part straw-colour or yellow, the rest being of a beautiful deep roscate hue, and fringed at the margin. The flowers are of good substance, and consequently last a long time in perfection. It is one of the grandest of its class, and is beautifully figured in Mr. Warner's splendid work, quoted below.—Supposed to be from *Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 16.

C. DEVONIANA, *Veitch*.—This beautiful hybrid, for which we are indebted to the skill of the late Mr. Dominy, is in growth like *Laelia elegans*, forming thin terete stems, each bearing two leaves some six or eight inches long. The flowers are upwards of five inches in diameter, and are produced in September; the sepals and petals are white, tinged with pink, which becomes deeper towards the points, and the lip is deep rosy purple.—*Garden hybrid*.

C. DOLOSA, *Rehb. f.*—A very pretty dwarf-growing species, with the sub-fusiform stems five or six inches long, the leaves oblong, in pairs, about four inches long and two and a half inches broad; the flowers are of a beautiful rosy magenta colour, with a yellow disk to the lip, which has the side lobes very much developed. This species is nearly allied to *C. Walkeriana*, and is sometimes regarded as a variety of that species, but differs in flowering from the apex of the pseudobulb and not from a leafless bulb, as in *C. Walkeriana*.—*Brazil: Minas Geraes*.

FIG.—*Gard. Chron.*, N.S., v. 430, figs. 78, 79.

C. DOMINGENSIS.—See *LAELIOPSIS DOMINGENSIS*.

C. DOMINIANA, *Lindley*.—A beautiful acquisition, obtained as a hybrid between *C. labiata* and *C. amethystina*, the latter a form of *C. intermedia*. In habit it somewhat resembles *Laelia elegans*, but is less robust. The flowers are six inches in diameter. The sepals and petals are white, delicately shaded with pink, the lip rosy purple, edged with white, and having a deep orange blotch in the throat.—*Garden hybrid*.

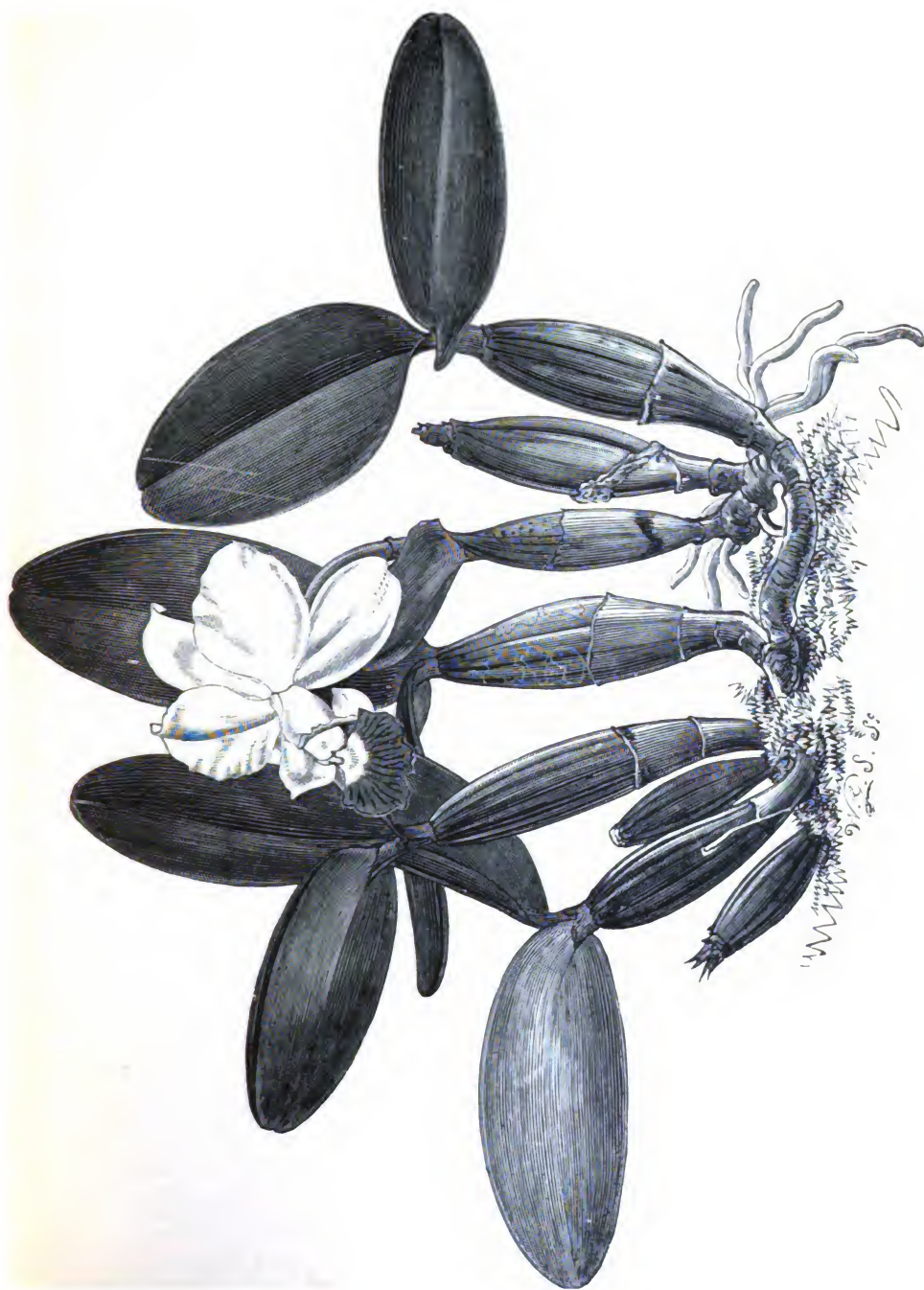
C. DOMINIANA ALBA, *Veitch*.—This plant resembles *C. Dominiana* in all but the colour of the flowers, in which the sepals and petals are broad, white, faintly shaded with lavender, and the lip is pure white, with a lilac blotch in the centre.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 367.

C. DOMINIANA LUTEA, *Veitch*.—An elegant variety, in which the flowers have the sepals and petals of a delicate blush, and the lip white in front, suffused with yellow, the disk being yellow, streaked with rose.—*Garden hybrid*.

C. DOWIANA, *Bateman*.—This superb species was imported from Costa Rica in 1864, and flowered the following autumn. It has stout clavate sulcate monophyllous stems; about a foot high, oblong obtuse leaves, and very large flowers, of which the sepals and petals are of a bright nankin colour, suffused on the under sides with crimson, and the lip a rich bright dark crimson-purple, beautifully streaked with gold. *C. Dowiana* is undoubtedly the most gorgeous of its family, bearing spikes of five or six flowers each. We do not find this plant so free-blooming as others, and only a very few people grow it well. We have bloomed fine plants, but have found them best grown in baskets as near the light as possible, at the warmest end of the *Cattleya* house, and they must have a copious supply of water during the growing season. This is a plant that no collection should lack.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 5618; *Warner, Sel. Orch. Pl.*, ii. t. 27; *Ill. Hort.*, t. 525; *Flore des Serres*, tt. 1709—10; *Bateman, 2nd Cent.*, t. 191; *Jennings, Orch.*, t. 33; *Belg. Hort.*, 1869, tt. 13—14; *Veitch's Man. Orch. Pl.*, ii. p. 15; *Journ. of Hort.*, xv. 1887, p. 473, f. 57.



CATTLEYA DOLOSA.
(From the *Gardeners' Chronicle*.)

C. DOWIANA AUREA, *Williams et Moore*.—A very beautiful and distinct form of *C. Dowiana*, differing from the type in its being devoid of crimson on the sepals and petals, and in the lip having more yellow in it; the sepals and petals are primrose yellow, the lip rich velvety purple-crimson, distinctly veined with golden yellow; it flowers during the autumn, and lasts for a couple of weeks in beauty. We have found this variety more free-flowering than *C. Dowiana*.—*U. S. Colombia*.

FIG.—*Orchid Album*, ii. t. 84; *Illust. Hort.*, 1883, xxx., 3 ser., t. 493; *Reichenbachia*, i. t. 5; *Id.* ii. t. 80, *C. Dowiana chrysotora*; *Lindenia*, i. t. 28; *Gardening World*, 1888, v., p. 245; *Ilrue Hort.*, 1892, p. 492 (plate) (*C. chrysotora*).

SYN.—*Cattleya aurea*.

C. DOWIANA AUREA STATTERIANA, *Williams et Gower*.—Sepals and petals soft, creamy white, lip beautifully undulated at the margin, intense deep velvety crimson-magenta, having a few bold streaks of golden yellow running into it, and at the sides near the throat is a large blotch of tawny orange-yellow.—*U. S. Colombia*.

FIG.—*Lindenia*, viii. t. 356; *Orchid Album*, x. t. 463; *Journ. of Hort.*, xxv., 1892, p. 277, f. 38.

SYN.—*C. Dowiana Statteriana*, *Hort.*

C. DOWIANA AUREA, YOUNG'S VAR., *H. Williams*.—We received this beautiful and distinct variety from Reginald Young, Esq., Fringilla, Linnett Lane, Liverpool. The flowers are medium in size and sweet-scented. Sepals and petals bright yellow, the anterior portion of the lip rich velvety purple-crimson, but not veined as in the type. This colour is carried round the outer margins of the lip to its base. This, together with the crimson purple veins of the throat, encircle two large orange-yellow areas, 1 inch long by $\frac{1}{2}$ inch broad, giving to this variety a most distinct character.—*Antioquia, U. S. Colombia*.

FIG.—*Orchid Album*, ix. t. 432.

C. DUKEANA, *Rehb. f.*—A natural hybrid which was found amongst a lot of imported plants of *C. Leopoldii*. The sepals are light ochre-coloured outside, inside mauve-purple. The petals are of the same colour, lighter at the borders. The mid-lobe of the lip is a beautiful mauve-purple with a triangular sulphur-yellow coloured area at the base and a narrow white border. Named in honour of the late Dr. Duke, The Glen, Lewisham.—*Brazil*.

C. EDITHIANA, *Warner*.—A splendid variety, in habit like *C. Mossiae*, and growing a foot high, with dark green foliage. The flowers are very large, measuring from six to seven inches in diameter; the sepals and petals are light mauve, and the lip also is mauve, striped with white, the discal part buff. The flowers are produced in May and June, and remain in perfection three or four weeks. The only example we have seen of this was in the collection of R. Warner, Esq., at Broomfield.—*Brazil*.

C. ELATIOR.—See *CATTLEYA GUTTATA*.

C. ELDORADO, *Linden*.—This species is a very beautiful object, and a valuable addition to our Orchid collections. In growth it resembles *C. quadricolor*. Its short clavate stems terminate in a solitary oblong-ligulate leaf and a two-flowered peduncle, the flowers being remarkable for their somewhat narrow

sepals and petals, which are white just tinted with pink, the lip white at the base, where it is closely folded round the column, the expanded portion lobed and crenate at the edges, deep purplish magenta in the front, half the throat being heavily stained with orange. Its flowers are produced during the late summer and early autumn months.—*Rio Negro*.

FIG.—*Flore des Serrcs*, t. 1826 ; *Lindenia*, vi. t. 262.

C. ELDORADO ALBA.—See *CATTLEYA ELDORADO VIRGINALIS*.

C. ELDORADO ORNATA, *Rehb. f.*—This new variety, which flowered in 1883 with W. Lee, Esq., late of Downside, Leatherhead, has very dark purple sepals and petals, and a large dark purple blotch covering the end of each petal ; the lip is as in the type ; it flowers during the autumn months.—*Rio Negro*.

C. ELDORADO SPLENDENS, *Linden.*—This is a very beautiful and superior form of the type, with very large flowers. The sepals and petals are clear rose, the latter broad and serrated at the edges, the lip large, emarginate, having a rich deep orange throat, succeeded by a circle of white, which is again followed by rich violet-purple, extending to the front and round the whole margins, where it is finely saw-toothed. The front portion of the lip has somewhat of a quadrate outline. It is a most desirable plant, and should be in every collection.—*Rio Negro*.

FIG.—*Illust. Hort.*, 3 ser., t. 7 ; *Orchid Album*, vii. t. 310.

C. ELDORADO VIRGINALIS, *Williams.*—This is a white variety of *C. Eldorado*, and is a very chaste and most desirable plant. The sepals and petals are snow-white ; the lip and column of the same colour ; the throat bright orange. This plant flowers during August and September, a season when Orchid flowers are becoming scarce ; and its blossoms are deliciously sweet-scented.—*The Amazon country*.

FIG.—*Ill. Hort.*, 3 ser., t. 257 ; *Reichenbachia*, ii. t. 93 ; *Lindenia*, iii. t. 101 ; *Orchid Album*, ix. t. 388.

SYN.—*C. Eldorado alba*, *C. crocata*, *C. Wallisii*, *C. virginalis*.

C. ELDORADO VIRGINALIS ROSEA, *Williams.*—This desirable variety is like the preceding one in every respect, saving that it bears a distinct rosy purple blotch on the front of the anterior portion of the lip ; it blooms during August and September.—*The Amazon country*.

C. EPIDENDROIDES.—See *CATTLEYA LUTEOLA*.

C. EXONIENSIS, *Rehb. f.*—A splendid garden hybrid obtained in the nursery of Messrs. Veitch and Sons, and for the raising of which we are indebted to the late Mr. Dominy. It had for its parents *C. Mossiae* (seed parent) and *Laelia purpurata*, and like them has clavate monophyllous stems and gorgeous flowers. The sepals and petals are in shape like those of *C. Mossiae*, and tinted with delicate blush ; the lip is much enlarged in front, undulated, and of an intense rich velvety rose-purple with a white margin, the throat deep orange or golden yellow, with two purplish veins in the central part of the base, and the broad

anterior part traced over with darker veins. It blooms in August and September. There are several variations amongst the seedlings, differing much in colour.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 269; Warner, *Nl. Orch. Pl.*, ii. t. 36; Jennings, *Orchids*, t. 1.
 SYN.—*Laelia exoniensis*.

C. FAUSTA, *Rehb. f.*—A charming hybrid, the happy result of a cross between *C. exoniensis* and *C. Loddigesii*, the latter the seed-bearing parent. The plant is intermediate in character between the parents. It has flowers of a pretty rosy lilac colour; the lip white with a large yellow disk, extending the whole length of the throat, tipped with crimson. It blooms about the end of November, and on that account will be very valuable. This was raised in Messrs. Veitch & Sons' nursery at Chelsea. In one variety noticed by Professor Reichenbach under the name of *radians* there are numerous dark purplish bars or streaks radiating from the centre of the lip, and distributed over the whole of the anterior portion. This variety is represented in the *Gardeners' Chronicle* (as quoted below) at fig. 57a.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 1873, p. 239, fig. 57. The figure in *Floral Mag.*, 2 ser., t. 189, given under this name, cannot be a true representation of the plant.

C. FLAVEOLA, *Rehb. f.*—This hybrid was raised by Messrs. Backhouse and Son, York, and is a cross between *C. intermedia* and *C. guttata*. Professor Reichenbach describes it in the *Gardeners' Chronicle*, 1888, iv., p. 473, as follows:—"The flower gave me at first the impression of a yellow *Laelia elegans*. It is equal to a medium-sized flower of that species, and has ligulate, rather acuminate sepals and petals, broader in the middle, all of a pale clear yellow, coming very near to the lightest sulphur yellow. The lip has much the same shape as that of *C. guttata*. The side laciniae are semi-cordate at the base, oblong, prolonged into a long semi-lanceolate apex equal to the narrow claw of the mid lacinia, which extends into a transversely oblong, emarginate, crenulate, rugose mid lacinia; the whole mid lacinia is purple, as on the tops of the white side laciniae, both inside and outside. The column is very plump, white purple at the top." Prof. Reichenbach states it is also called "*hybrida picta*," but the figure of that plant in the *Floral Magazine* for 1881, t. 473, does not agree with the description of the present plant.—*Garden hybrid*.

C. FLAVIDA.—See *C. LUTEOLA*.

C. GASKELLIANA, *Hort.*—A grand addition to the already numerous group allied to *C. labiata*, the well-rounded flowers measuring seven inches across. In its manner of growth it varies considerably, in some cases resembling *C. Mossiae* and *C. Mendelii*, and in others partaking of the broad leaf and short bulb of *C. Warneri*. In the colouring and form of its flowers it also varies considerably. The first blossoms of it that were seen in this country much resembled a pale form of *C. Mendelii*, others resembled the old and rare *C. labiata pallida*, and we have seen some varieties as dark as *C. Warneri*. The saddle-shaped blotch on the lip is in some instances a bright deep yellow, approaching to orange, and in others a lemon yellow. It is at any rate a most

desirable plant, be it species, sub-species, or variety, and will be found useful in all collections, flowering as it does during the early autumn months, and being sweet-scented. It is named in honour of H. Gaskell, Esq., of Liverpool, a great admirer of this class of plants, and who has a fine collection of them.—*Venezuela*.

FIG.—*Rerue Hort. Belge*, 1887, p. 205 (plate); *Gartenflora*, 1888, t. 1274 (var. *albens*); *Reichenbachia*, ii. t. 75; *L'illustration Horticole*, xxxiii. t. 613.

C. GASKELLIANA PICTA, *Rolfe*.—A distinct and striking variety from the collection of The Rt. Hon. Joseph Chamberlain, M.P., Highbury, Birmingham. Mr. Rolfe thus describes it in the *Gardeners' Chronicle*, 1890, viii., p. 352: "The sepals and petals have a ground colour of the usual lilac shade, but the former are variegated and veined with light purple, while the latter have each a broad and sharply-defined median band, with a few short radiating branches of the same colour. The lip is normal except that there are one or two purple streaks on the front lobe. It is very distinct from any other form I have seen, and is quite analogous with *C. Triunac striata* recently figured in *Lindenia*, v. t. 232, in the arrangement of the colouring."—*Venezuela*.

C. GASKELLIANA ALBA, *Williams*.—This chaste variety has pure white sepals and petals with a yellow stain in the throat. Flowers during June and July.—*Venezuela*.

FIG.—*Orchid Album*, viii. t. 353.

C. GIGAS, *Linden et André*.—This is undoubtedly one of the finest *Cattleyas* known, its flowers being amongst the largest and the most beautifully coloured, measuring seven to eight inches across. It has short fusiform stems, each bearing one oblong leathery leaf, and it produces from four to eight flowers on a peduncle. The flowers are very handsome, the sepals and petals pale rose, and the lip large and broad, of a rich deep purple or violet in front, and having a large yellow eye-like blotch on each side of the throat. The plant is not so free-flowering as many *Cattleyas*. We have had the best success with it when it was grown in a basket or pot suspended from the roof, as near the light as possible, at the warm end of the *Cattleya* house. It flowers in May, June, and July.—*U.S. Colombia*.

FIG.—*Ill. Hort.*, 3 ser., t. 178; *Floral Mag.*, 2 ser., t. 144; *Warner, Sel. Orch. Pl.*, iii. t. 7; *Gard. Chron.*, N.S., xiv. 268, fig. 50; *Id.*, xvii. 343, fig. 53; *Lindenia*, ii. t. 63.

C. GIGAS BURFORDIENSIS, *Hort*.—An exceedingly handsome variety of this grand Orchid, exhibited by Sir Trevor Lawrence, Bart. The flowers measure fully eight inches across; the sepals and petals are of a beautiful rosy lilac colour, and the lip is large and flat, three inches in diameter, and of a deep amethyst colour, margined with dark rosy purple, the throat orange-coloured, and the portion which encircles the column of a rich rosy purple.—*U.S. Colombia*.

C. GIGAS FRANCONVILLIENSIS, *H. Williams*.—A most chaste and lovely novelty, having the sepals and petals pure white. The lip is deep magenta-purple broadly margined with pure white. This variety was flowered in July, 1893, by the Duc de Massa, Chateau de Franconville, France, and is named by his desire after his beautiful estate.—*U.S. Colombia*.



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(From the *Ga*



ATTFLEYA GIGAS

ED. BY H. T. LAWRENCE, BART.

(*deners' Chronicle.*)

C. GIGAS SANDERIANA, *Hort.*—This is a fine form, and has frequently red-tinted bulbs. It is equal in size and colour to the best forms of *C. gigas*; the lip is a deep magenta-purple. It flowers in July and August.—*U. S. Colombia*.

FIG.—*Gard. Chron.*, s.s., xx. 401, fig. 62; *L'Orchidophile*, 1886, p. 17.

C. GRANULOSA, *Lindley*.—A free-growing species, having slender terete stems, a pair of oblong lanceolate leaves, and large olive-green flowers, with rich brown spots; the lip whitish, spotted with crimson, and having its surface broken up into numerous granulations. It blooms in August and September, and remains long in perfection. This is not so showy as many of the *Cattleyas*; but where there is room it is worth growing, on account of its distinct colours.—*Guatemala*.

FIG.—*Bot. Reg.*, 1812, t. 1; *Bot. Mag.*, t. 5048; *Annales de Gand*, 1846, t. 103.

C. GRANULOSA ASPERATA, *Rchb. f.*—A variety with brownish sepals and petals, spotted with dark purple, lip yellowish at the base, anterior portion of a beautiful purple with a broad white border. The anterior surface is rough in an extraordinary manner.

C. GRANULOSA BUYSSONIANA, *O'Brien*.—This variety is said to differ from the type in having the sepals and petals devoid of spots. Named in honour of M. le Comte du Buysson, and was exhibited before the Royal Horticultural Society on October 14th, 1890. Blooms in autumn.—*Brazil*.

FIG.—*Lindley*, vi. t. 270; *Gard. Chron.*, 3 ser., viii., 1890, p. 589, f. 116.

C. GRANULOSA SCHOFIELDIANA.—See *C. SCHOFIELDIANA*.

C. GUATEMALENSIS, *Moore*.—A very distinct and pretty Orchid, whose flowers, though not so large as those of many of the species, are yet from their curious colour—which is in the sepals and petals rosy purple and buff, and in the lip reddish purple with an orange disk marked with a few crimson lines—amply compensated for as to size, and, being produced in large racemes, the plant becomes a very desirable addition to any collection. It is similar in habit to *C. Skinneri*, and requires the same kind of treatment.—*Guatemala*.

FIG.—*Floral Mag.*, t. 61.

C. GUATEMALENSIS WISCHUSSENIANA, *Rchb. f.*—The flowers of this variety have very light reddish purple sepals, rose purple petals and a brown lip without a yellow disk, but at the very base a small white area, column white. The lip is not so distinctly lobed, but is rhomboid or oblong-acute. First flowered with Mr. Wischussen, Wood Green.—*Guatemala*.

FIG.—*Rchb. f.*, in *Gardeners' Chronicle*, 1888, iv. p. 378.

C. GUTTATA, *Lindley*.—A free-growing Orchid, attaining about twenty inches in height, with slender terete stems, two oblong fleshy leaves, and a nine to ten-flowered raceme of handsome flowers, the sepals and petals of which are greenish yellow beautifully spotted with crimson, the lip white stained with purple. This is a very distinct species, and when well grown will produce as

many as nine or ten flowers on a spike. It blooms in October and November, lasting two weeks in perfection.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1406; *Loddiges, Bot. Cab.*, t. 1715; *Trans. Hort. Soc.*, 2 ser., ii. 177, t. 8; *Annales de Gand*, 1848, t. 175.

SYN.—*C. sphenophora*, *C. elatior*.

C. GUTTATA LEOPARDINA, *Linden et Rodigas*.—In habit of growth this resembles the type. Sepals and petals greenish yellow profusely spotted with purple brown. The lateral lobes rolled over the column, white; mid-lobe crimson purple.—*Brazil*.

FIG.—*Lindenia*, i. t. 19.

C. GUTTATA LEOPOLDII, *Linden et Rehb. f.*—A charming variety, whose terete stems reach about twenty inches in height, and bear a pair of short dark green leaves; it generally has from six to ten flowers on a spike, and is a free-blooming kind, producing its fragrant flowers after it has made its growth. The sepals and petals are brownish or bronzy green, spotted with crimson, the lip rich velvety purple. We have seen this with thirty flowers on one head, a condition in which it was exhibited at Regent's Park by Mr. Page, when gardener to the late W. Leaf, Esq., Streatham, in whose collection it was grown; this was the finest spike we ever remember to have seen. It continues in perfection about three weeks, making a fine plant for exhibition on account of its distinct colour.—*Brazil*; *Bahia*.

FIG.—*Pescatorea*, t. 43; *Ill. Hort.*, t. 69; *Orchid Album*, i. t. 16; *Flore des Serres* tt. 1471—2; *Reichenbachia*, ii. t. 77.

C. GUTTATA LEOPOLDII ODORATISSIMA, *Rehb. f.*—"This variety has the sepals and petals yellow on both sides, side laciniae of lip white, its disk and anterior laciniae purple, column very strong, purple at the top and a little at the base, the remaining part white."—Reichenbach in *Gard. Chron.*, 1888, iv. p. 378. This variety originated with M. Peeters, Brussels, who says the flowers have a delicious Heliotrope scent.

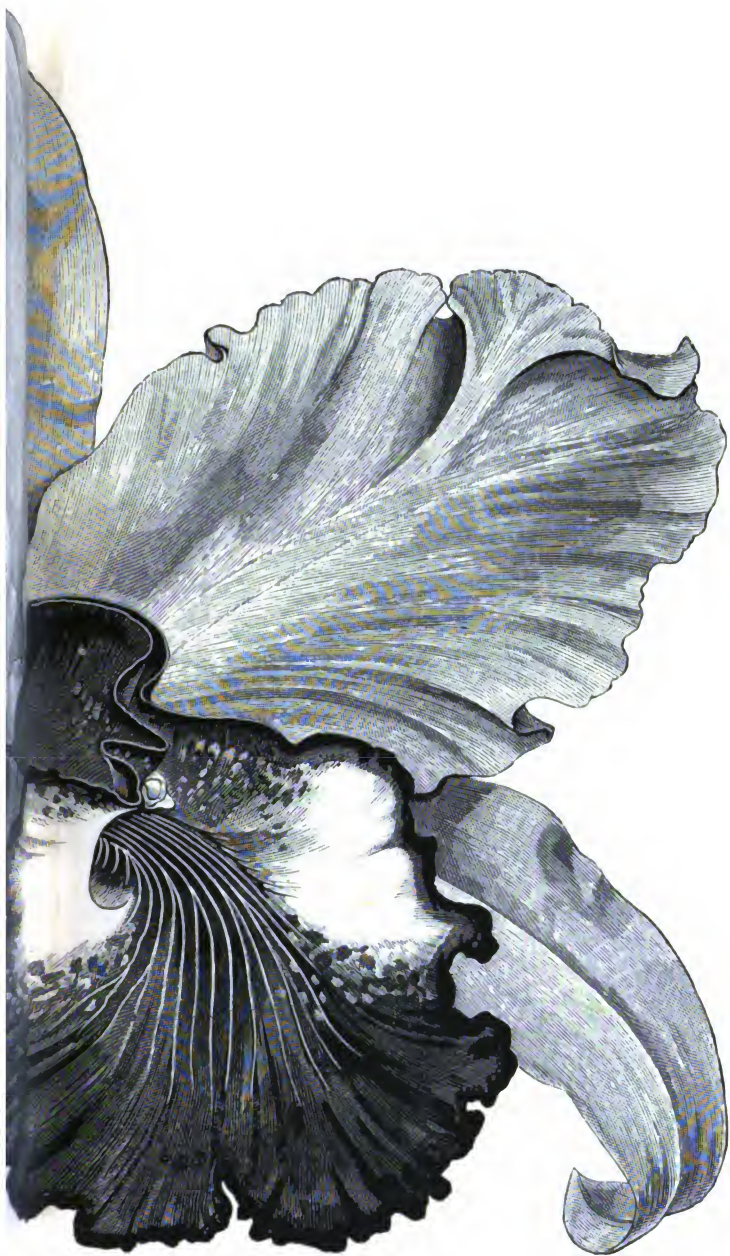
C. GUTTATA LILACINA, *Rehb. f.*—This beautiful variety was flowered by Sir T. Lawrence, Bart., in June, 1881. It is quite distinct from the type, the sepals and petals being blush white, irregularly spotted with magenta, and the lip large and well fringed, of a bright magenta-crimson. It flowers in June and July.—*Brazil*.

C. GUTTATA PRINZII, *Rehb. f.*—A very beautiful and distinct form, growing about a foot high, and having white sepals and petals, which are flushed with rosy magenta, and faintly spotted with a darker tint of the same colour, the broadly-expanded deeply crenate-lobed lip being of a bright purplish crimson. It flowers in June and July. Prof. Reichenbach quotes, as a synonym of this, the *C. amethystoglossa* of British gardens, a view which his figure, here quoted, does not appear to confirm; nor does the habit of the plant, for *C. amethystoglossa* grows as much as three feet in height. *C. guttata Keteleeri* seems from the figure to be the same as the present variety.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 172; *Rev. Hort.*, 1875, 350, with tab. (*guttata Keteleeri*).



CATTLEYA
(From the C)



HARDYANA.
(*Hardening World.*)

C. GUTTATA WILLIAMSIANA, *Rehb. f.*—A fine variety, flowered by W. Lec. Esq., late of Leatherhead. In this the lip is pale rosy lilac, with dark rosy purple front lobe; the sepals and petals dull purple, faintly striped towards the margins, and in some cases spotted with deep purple. Flowers in June.—*Brazil*.

FIG.—*Orchid Album*, v. t. 212.

C. HARDYANA, *Hardy*.—The most gorgeous *Cattleya* we have ever seen, doubtless a hybrid between *C. gigas* and *C. Dowiana aurea*, which grow together, and in a batch of which it was imported. The growth resembles that of *C. gigas*. The individual flowers measure eight inches across, the sepals and petals are of a deep rosy purple; the lip is three inches across, its anterior portion much frilled, of a pure magenta crimson, the throat and upper portion of the lip veined with rich yellow. The lip has two eyes peculiar to *C. gigas*, which are in this case of a richer yellow, margined with the magenta as in the anterior portion of the lip. The flower is very strongly scented. It blossoms in August, and was flowered by G. Hardy, Esq., Pickering Lodge, Timperley.—*New Grenada*.

FIG.—*Orchid Album*, v. t. 231; *Reichenbachia*, ser. 2, ii. t. 55; *Lindenia*, vii. t. 305, (var. *Laternensis*); *Gardening World*, 1888, v. p. 821.

C. HARDYANA GARDENIANA, *Hort.*—This variety originated with M. Garden of Bois Colombes, near Paris, and differs from the type by the absence of the veins of yellow which take the form of large yellow areas.—*U.S. Colombia*.

FIG.—*Lindenia*, viii. t. 353.

C. HARRISII, *Rehb. f.*—A cross between *C. Mendelii* and *C. guttata Leopoldii*. The sepals and petals are of a beautiful amethyst covered with numerous very small purple spots. The anterior portion of the lip is of a rich purple. The flowers are said to be as large as those of a strong *C. granulosa*. Named in honour of the late Dr. Harris, of The Grange, Lamberhurst.—*Garden hybrid*.

C. HARRISONIANA, *Bateman*.—A free-growing Orchid, attaining the height of twenty inches, and blooming in abundance from July to October. The flowers, which will last in good condition for three weeks, are of a beautiful rose colour, having on the lip a slight tinge of yellow. This is a noble plant, and amply repays the care required to grow it well.—*Brazil: Rio Janeiro*.

FIG.—*Parton, Mag. Bot.*, iv. 247, with tab. (*Harrisoniae*); *Annales de Gand*, 1845, t. 5; *Gard. Chron.*, 3 ser., v. 1889, p. 108, f. 12 (*Harrisoniae*).

C. HARRISONIANA REGNIERIANA, *Rehb. f.*—"The rather short sepals and petals show such a wonderfully clear, warm purple tint as I never saw in the affinity. The lips side laciniae are light purple outside, yellow in the mid line. The inside is light yellow with darker keels and a light purple border to the side laciniae, the mid lacinia is very deeply plaited and minutely crenulate and the whole lacinia stands upright and hides the top of the column. It is whitish yellow with an orange callous basilar disk and washed with purple outside. This lovely thing was kindly sent me by Mr. A. Regnier, Fontenay-sous-Bois." Reichenbach in *Gardeners' Chronicle*, 1888, 3rd ser., iv. p. 264.

C. HARRISONIANA VIOLACEA, *Hort.*—A charming variety, which grows about two feet high, and makes two growths in one year, flowering on both in

July, August, and September; it will last in bloom four weeks if kept in the coolest house. The sepals and petals are of a beautiful rosy purple, and the lip is of the same colour, with a little yellow in the centre, and a yellowish white margin. It makes a fine exhibition plant, the colour being very different from that of many other Orchids.—*Brazil: Rio Janeiro.*

FIG.—*Orchid Album*, vii. t. 333.

C. HOLFORDI.—See *C. LUTEOLA*.

C. HYBRIDA PICTA, *Hort. Veitch*.—This was raised by Mr. Dominy, in the Exeter nurseries of Messrs. Veitch and Sons. Flowers produced several together on an erect spike which proceeds from the apex of the pseudobulb. Individual flowers about the size of *C. guttata*. Sepals pale green, slightly spotted with purple, petals also light green, spotted similarly, and broadly margined with rose colour. Mid lobe of lip violet-purple margined with white, throat yellow.—*Garden hybrid.*

FIG.—*Floral Mag.*, 1881, t. 473.

C. INTERMEDIA, *Graham*.—A beautiful Orchid of the two-leaved set, of neat habit, one to two feet high, and a free grower. The sepals and petals are delicate rose colour, and the lip is of a rich rosy purple. It blooms in May and June, and lasts for three or four weeks in perfection if kept in a cool place. This species frequently produces as many as nine flowers on a spike, and makes a fine plant for the May and June shows.—*Brazil.*

FIG.—*Bot. Reg.*, t. 1919; *Bot. Mag.*, t. 2851; *Maund, Bot.*, iv. t. 195; *Parton, Mug. Bot.*, i. 151, with tab.; *Lem. Jard. Fl.*, t. 379; *Ann. de Gand.*, 1843, t. 201; *Veitch's Man. Orch. Pl.*, ii. p. 39; *Gartenflora*, 1890, t. 1313.

SYN.—*C. amethystina*.

C. INTERMEDIA ALBA.—See *C. INTERMEDIA PARTHENIA*.

C. INTERMEDIA GIBEZIAE, *Lind. et Rodigas*.—This variety differs from the preceding, in having pure white flowers.—*Brazil.*

FIG.—*Lindenia*, iii. t. 133.

C. INTERMEDIA PARTHENIA, *Rchb. f.*—A pure white variety, introduced in 1886, and flowered in the fine collection of R. H. Measures, Esq., of Streatham. The bulbs are said to be twice as long as those of the type.—*Brazil.*

SYN.—*C. intermedia alba Hort.*

C. INTERMEDIA PUNCTATISSIMA, *Hort.*—A distinct variety, having the sepals and petals spotted with rosy purple.—*Brazil.*

FIG.—*Reichenbachia*, 2nd series, i. t. 24.

C. INTERMEDIA SUPERBA, *Hort.*—A splendid variety, growing about fourteen inches high, and making two growths in one year, but only flowering from that made in the spring. The sepals and petals are delicate rose, the lip broad and of the richest purple; from four to six blossoms are produced on spike. It makes a fine plant for exhibition, and will last about four weeks in perfection.—*Brazil.*

C. INTRICATA, *Rehb. f.*—In habit this species comes nearest to *C. intermedia*, the flowers being somewhat intermediate between *Leelia elegans* and *C. intermedia*; the sepals and petals are of the lightest whitish rose; and the lip resembles that of *L. elegans piota*, but that the side lobes are white, and the blade of the central lobe, which has an abrupt stalk, is of the deepest purple. It flowers in June and July.—*Brazil*.

C. INTRICATA MACULATA, *Rolfe*.—A charming thing according to Mr. Rolfe, who thus describes it in the *Gardeners' Chronicle*, 1890, vii. p. 763: "A few days ago Mr. Malcolm Cook, of Kingston Hill, Surrey, brought to Kew a fine plant which is evidently derived from the same parentage as *C. intricata*, though somewhat different in colour. The sepals and petals are of a delicate rosy-blush with many rosy-purple spots, in this respect recalling the variety *Prinzii*. The side lobes of the lip are of a uniform delicate blush, and the front lobe deep amethyst purple."—*Santa Catharina, Brazil*.

C. KRAMERIANA, *Rehb. f.*—"This plant is supposed to be a natural hybrid between *C. intermedia* and *C. Forbesii*, and was imported by Mr. Franz Kramer, gardener to Herr Rücker-Jenisch, at Klein Flottbeck, Germany, from Brazil. Sepals and petals rather narrow, pale rose-coloured. The side laciniae are semi-oblong, half heart shaped at the base and apex, with a rose-coloured border, and the remainder, excepting the discoidal area, of the lightest purple. Mid-lacinia semi-oblong, emarginate, toothed, wavy, with two discoidal areas of the deepest mauve-purple; the remaining part is white" (Reichenbach in *Gardeners' Chronicle*, 1888, 3rd series, iv. p. 323).—*Brazil*.

C. LABIATA, *Lindley*.—One of the finest of the *Cattleyas*, a free-blooming species, growing about twenty inches high, and flowering as it does late in the autumn is a very valuable plant. The stems are club-shaped, monophyllous, and the flowers are large, often six or seven inches in diameter, three or four on a spike, with broad rose-coloured sepals and petals, and a rich magenta-crimson lip. It blooms in October and November, and will continue in perfection three or four weeks. The finest specimen we ever saw was in the collection of the late R. Hanbury, Esq., The Poles, near Ware, the plant being cultivated in a large tub, about two feet across. This superb kind was first flowered by the late Mr. Cattley, of Barnet, in honour of whom the genus is named. This species, though one of the first introduced, was up till quite recently very rare, but now its habitat has been discovered large consignments are frequently arriving. Several beautiful forms, such as *Gaskelliana*, *Percivaliana*, *Warneri*, &c., are sometimes referred to as sub-species of *C. labiata*, but we have thought it more convenient to treat of them under their separate names.—*Brazil*.

FIG.—*Lindl. Coll. Bot.*, t. 33; *Bot. Reg.*, t. 1859; *Bot. Mag.*, t. 3998; *Loddiges, Bot. Cub.*, t. 1956; *Hook. Ex. Fl.*, t. 157; *Past. Fl. Gard.*, i. t. 24 (vars.); *Paxton, Mag. Bot.*, iv. 121, with tab.; *Id.*, vii. 79 (var. *atropurpurea*), with tab.; *Flore des Serres*, tt. 1893-4; *Jennings, Orch.*, t. 45; *Orchid Album*, ii. t. 88; *Knowles and Westc., Floral Cub.*, t. 26; *Gartenflora*, t. 146 (var. *superba*); *Hook, 1st Cent.*, t. 28; *Gartenflora*, 1888, t. 1281 (var. *magnifica*); *Reichenbachia*, 2nd series, vol. ii. t. 49; *Veitch's Man. Orch. Pl.*, ii. p. 14; *Lindenia*, iii. t. 112; viii. t. 370 (vars.); *L'Orchidophile*, 1889, p. 81; *Jour. of Hort.*, xxiv., 1892, p. 17, f. 3; *Revue Hort. Belge*, 1892, p. 97, t. 9.

SYN.—*C. labiata autumnalis*, *C. Waroquana*.

C. LABIATA ALBA, *Lind. et Rodigas*.—A pure white variety of this old favourite flowered with M. Waroque, Mariemont, Belgium; the sepals and petals are pure white, also the lip; the throat is stained with pale yellow.—*Brazil*.

FIG.—*Lindenia*, viii. t. 370; *Journ. of Hort.*, xxvi., 1893, p. 23, f. 4.

C. LABIATA AUTUMNALIS.—See *C. LABIATA*.

C. LABIATA CANDIDA, *Lindley*.—One of the finest of the *Cattleyas* when well bloomed; it grows about a foot high, and has light green foliage. The flowers are large, but produced sparingly, and often deformed, but when well expanded they are magnificent, a single bloom sometimes measuring seven inches across. The sepals and petals are pure white, while the lip is of the richest crimson, beautifully fringed; it flowers during June and July, and will continue three or four weeks in perfection. This was first flowered at Sion House, and is hence often called the Sion House *Cattleya*.—*Brazil*.

FIG.—*Pest. Fl. Gard.*, i. t. 24, fig. 1.

C. LABIATA FLAMMEA, *Lind. et Rodigas*.—A high-coloured variety with deep rosy purple sepals and petals, lip deep rosy purple, veined with deep crimson purple towards the centre of the anterior part, throat deep yellow.

FIG.—*Lindenia*, viii. t. 370.

C. LABIATA FOLEYANA, *H. Williams*.—A very handsome variety, which originated in 1892 with Admiral Foley, Fordingbridge, Hants. The flowers are eight and a half inches in diameter. Sepals and petals pure white; lip mottled with rosy purple. Flowers produced in October and November.—*Brazil*.

C. LABIATA GLORIOSA, *Lind. et Rodigas*.—Sepals and petals pale rose, lip pale rose with a dark crimson purple blotch on the centre of its anterior part, throat yellow with radiating orange lines.

FIG.—*Lindenia*, viii. t. 370.

C. LABIATA LEUCOPHAEA, *Bull.*—A distinct variety of *C. labiata*, with blush white sepals and petals, and a deep lilac-coloured lip margined with white, the throat yellow. It was flowered by R. H. Measures, Esq., Woodlands, Streatham.—*Brazil*.

C. LABIATA LUDDEMANNIANA.—See *CATTLEYA SPECIOSISSIMA* LOWII.

C. LABIATA PALLIDA, *Williams*.—A beautiful variety, whose growth is shorter than that of the type, and which blooms in August. The leaves grow erect, and are of a light green colour. In the flowers the sepals and petals are light pink and the lip crimson, beautifully fringed. A useful variety on account of its flowering earlier than *C. labiata*, and if the flowers are kept dry, it will remain three weeks in good condition. The finest plant we ever saw of this variety is in the collection of the Comte de Germiny in France; this had at the time we saw it no less than forty-eight expanded flowers, and did great credit to M. Rondeau, the former gardener. This variety is closely allied to *C. Gaskelliana*.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 121.

C. LABIATA PESCATOREI, *Hort.*—A very beautiful variety, of free-blooming habit, with light green foliage, and pale rose-coloured flowers, with a rich crimson lip. This is distinct from the old form of *C. labiata*, and blooms during the autumn, continuing three weeks in perfection.—*Brazil*.

C. LABIATA PICTA, *Lindley*.—A very charming variety, with large flowers, which have the sepals and petals lilac-rose blotched with crimson, and the lip of a very rich deep crimson, white on the margin on the upper side, where the lateral lobes meet; the petals are remarkably broad.—*Brazil*.

FIG.—*Part. Fl. Gard.*, i. t. 24, fig. 2.

C. LABIATA PURPUREA, *H. Williams*.—A very high-coloured variety, with intense purple-crimson sepals and petals, lip same colour with a darker centre, throat deep yellow; this plant is in the collection of M. le Comte de Germiny, Château de Gouville, France.—*Brazil*.

C. LABIATA WARNERII.—See *C. WARNERII*.

C. LAWRENCEANA CONCOLOR, *Rchb. f.*—A beautiful and distinct variety with uniform light purple flowers, the lip having no dark colour in the anterior portion. It was flowered by F. A. Philbrick, Esq., of Bickley Park.—*Roraima, British Guiana*.

C. LAWRENCEANA, *Rchb. f.*—A distinct and free-flowering species, discovered in 1842 by Sir Robert Schomburgk, and re-introduced in 1884 by Messrs. F. Sander and Co. Pseudobulbs 12 to 15 inches high, compressed and furrowed, generally of a reddish brown colour, rarely green. Leaves solitary, scape terminal, erect, issuing from a brownish purple sheath, many flowered. Flowers four to five inches across, similar in form to *C. Skinnerii*, fine rosy purple. Lip bright rosy purple, throat white. Flowers in March and April. This species should be a valuable plant for summer exhibitions, as we have on many occasions by retarding been able to keep it as late as the end of May and beginning of June.—*Roraima, British Guiana*.

FIG.—*Lindenia*, i. t. 44; *Reichenbachia*, i. t. 12; *Revue Hort. Belge*, 1886, p. 121; *Journ. of Hort.*, xii., 1886, p. 293, f. 52; xv., 1887, p. 451, f. 55 (var. *rosea superba*); *Orchid Album*, viii. t. 342; *Bot. Mag.*, t. 7133.

C. LEMONIANA, *Lindley*.—A pretty species in the way of *C. Mossiae*, but distinct in its growth, the leaves being shorter. It grows about a foot high, and has light green foliage. The flowers are pale pink, with yellow in the centre of the lip, and are produced during the summer, lasting for three or four weeks in bloom. Reichenbach includes it under *C. labiata*.—*Brazil*.

FIG.—*Bot. Reg.*, 1846, t. 35.

C. LOBATA, *Lindley*.—A charming species, very much like *C. crispata* in growth, but shorter in both stem and leaf. The flowers are of an uniform deep rich rose. It is a shy-flowering plant, producing its blossoms in May and June, and continuing about three weeks in perfection. This plant, which one seldom meets with at exhibitions on account of its shy-flowering properties, is exceptionally often seen in great perfection at the Manchester shows, so famed for their Orchidic displays. There is a variety called *C. lobata superba*, which

flowers more freely, and its spikes are larger. We exhibited a fine plant of this variety with seven spikes of blossom at our great International Horticultural Exhibition in 1866.—Brazil.

FIG.—*Lindl. Gard. Chron.*, 1848, 403, with woodcut; *Xenia Orch.*, i. t. 91; *Veitch's Man. Orch. Pl.*, ii. p. 74; *Gard. Chron.*, 3 ser., x., 1891, p. 577, f. 78.

SYN.—*C. Boothiana*; *Laelia Boothiana*; *L. lobata*.

C. LODDIGESII, *Lindley*.—A free-flowering and desirable species, which grows a foot or more in height, and has terete stems, a pair of ovate-oblong leaves, and medium-sized flowers, in which the sepals and petals are pale rose-colour tinged with lilac, and the lip light rose marked with yellow. It blooms in August and September, producing three or four flowers on a spike, remaining long in perfection.—Brazil; *Buenos Ayres*.

FIG.—*Loddiges, Bot. Cub.*, t. 337; *Lindley, Coll. Bot.*, t. 37; *Hook. Ex. Fl.*, t. 186; *Reichenbachia*, 2nd series, vol. i. t. 40; *Gard. Chron.*, 3 ser., v., 1889, p. 109, f. 13.

C. LODDIGESII MACULATA, *Williams*.—A very pretty spotted variety, having minute deep purple spots over the entire surface of the flower; very distinct.—Brazil.

C. LUCIENIANA, *Rehb. f.*—The following description is taken from the *Gardeners' Chronicle*, 1885, ii. p. 456, where the late Prof. Reichenbach first described it:—"A lovely *Cattleya*, with the bulbs and leaves of *C. Harrisoniana*, and a flower much like that of *C. Isabellae*, *Rehb.*, but much darker and richer in colour. The rather narrow sepals and petals are of a fine brown, most beautifully enlivened by a wash of purple. The lip is trifid; its side-laciniae are blunt triangular, the mid-lacinia 'cuneate,' cordate, emarginate, of the richest purple, the disk between the side-laciniae having red keels. The side-laciniae are pale yellow, with thick reddish veins. Column white, with purple lines on side, and numerous small points of purple. The front side of the column is whitish yellow at the base, with numerous purple lines around the border of the fovea. There can be no doubt its parents are *C. Forbesii* and *guttata* or *granulosa*. It is dedicated with pleasure to Lucien Linden, who kindly sent it to me."—Native country not stated.

C. LUTEOLA, *Lindl.*—A distinct but by no means showy species, producing flowers about two inches in diameter. Sepals and petals pale yellow, lip whitish at the anterior portion, side lobes striped with rosy purple.—Brazil.

FIG.—*Xenia Orch.*, i. t. 83; *Bst. Mag.*, t. 5032.

SYN.—*C. flarida*, *C. Meyeri*, *C. modesta*, *C. epidendroides*, *C. Holfordi*.

C. MANGLESII, *Rehb. f.*—A Veitchian hybrid, the result of a cross between *C. speciosissima* and *C. Loddigesii*. The flower is larger and brighter than in *C. Loddigesii*, and the lip is beautifully waved and toothed on the margin, white with a yellow line on the disk, and two small pale purple blotches, light purple on the margin.—Garden hybrid.

C. MARDELLII, *Seden*.—This fine hybrid has stems about four and a half inches long, terminated by two leaves. The sepals and petals are bright

magenta, the lip three-lobed, opening out on both sides of the column, the side lobes pale magenta, almost white towards the middle; down the centre of the throat is a broad bright yellow stripe, while the front of the lip is rich bright magenta-purple. A very handsome high-coloured plant, flowering in June. Raised at Messrs. Veitch and Sons'.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2 ser., t. 437; *Orchid Album*, vi. t. 237.

C. MARGINATA, *Pinel*.—A handsome dwarf-growing species, about six inches high, the stems cylindraceo-fusiform and one-leaved. The flowers are large, usually solitary, but sometimes two on a spike; sepals and petals rosy crimson; lip deep rose, margined with white. It produces its blossoms in September and October, and lasts three weeks in perfection. It is a very desirable plant, and ought to be in every collection, however small, as it requires but very little room. It grows best suspended from the roof of the cool-house, on a block of wood, with a little sphagnum moss, and it requires a good supply of water at the root in the growing season. There are many varieties of this species, and some of them are very beautiful in colour.—*Brazil*.

FIG.—*Parson, Mag. Bot.*, x. 265, with tab.; *Ill. Hort.*, t. 193; *Florist*, 1850, 91, t. 34.

SYN.—*C. pumila major*; *C. spectabilis*.

C. MASTERSONIAE, *Seden*.—A hybrid raised at Messrs. Veitch and Sons' between *C. labiata* and an unnamed seedling *Cattleya*. The stems are about eight inches long, two-leaved, somewhat resembling *C. superba*. The flowers are intermediate in aspect between *C. Loddigesii* and *C. labiata*, amethyst-coloured, the lateral lobes of the lip yellowish white with a delicate amethyst border, and the middle lobe an intense rich purple.—*Garden hybrid*.

FIG.—*Orchid Album*, ix. t. 385.

C. MASSAIANA, *Williams*.—This gorgeous *Cattleya* is doubtless a natural hybrid between *C. Dowiana aurea* and *C. gigas*, which two species are found growing together in the same district in Antioquia, U.S. Colombia. This plant was first flowered by M. le Duc de Massa, Château de Franconville, Luzarches, France, in 1888. The sepals and petals are in form like those of *C. Dowiana aurea*, bright rose-colour, mottled with white and softening off into white towards the base. Lip two and a half inches across, the margin beautifully frilled, rich magenta-crimson. The throat is striped with brownish crimson on a yellow ground, having two large areas of bright orange-yellow; flowers scented.—*U.S. Colombia*.

FIG.—*Orchid Album*, viii. t. 362.

C. MAXIMA, *Lindley*.—A magnificent species, growing from a foot to eighteen inches high, distinct in character, with furrowed club-shaped stems, bearing two oblong submarginate leaves, and producing from five to ten flowers on a spike in November and December, continuing in perfection for three weeks. The sepals and petals are bright rose, the lip richly variegated, with dark crimson veins down the centre. Of this species there are many varieties, and many plants have been imported within the last few years. There is a

variety with pale rose flowers known as *Hrubyanæ*.—*Ecuador*; *New Grenada*; *Peru*.

FIG.—*Bot. Mag.*, t. 4902; *Bot. Reg.*, 1846, t. 1; *Flore des Serres*, t. 2136; *Ill. Hort.*, 3 ser., t. 29; *Bateman*, 2nd Cent., t. 131; *Xenia Orch.*, i. t. 95; *Gard. Chron.*, N.S., xxii. 620, fig. 108; *Lindenia*, i. t. 12.

C. MAXIMA APHLEBIA, *Rehb. f.*—Flowers similar in shape to those of the type, but having no purple veins upon the lip. The yellow disk is surrounded by light purple. Imported by Mr. Bull.—*New Grenada*.

C. MAXIMA BACKHOUSEI, *Rehb. f.*—A very distinct and desirable variety, having plump short bulbs, with stiff upright leaves. The flowers are much richer in colour than those of the type. It was first flowered many years ago by Messrs. Backhouse and Sons, of York.—*U.S. Colombia*.

C. MAXIMA MARCHETTIANA, *Williams*.—This distinct variety was first flowered by G. Marchetti, Esq., Manor Heath, Halifax. Flowers about five inches in diameter, rich crimson lake, streaked and mottled with a paler colour. Lip much frilled, having a broad streak of yellow in the centre, ground colour bright crimson lake with lighter streak, margined with white. Flowers during the autumn and winter months.—*Ecuador and Northern Peru*.

FIG.—*Orchid Album*, ix. t. 404.

C. MENDELII, *Backhouse*.—A very fine species having short clavate stems, solitary oblong leaves, and very handsome flowers, something in the way of *C. Trianae*. The sepals and petals are large and broad, varying in colour from white to a light pink, and the lip is large, of a rich magenta colour; it flowers in April and May. This is undoubtedly one of the finest introductions of late years, and makes a very distinct plant for exhibition. There are many very handsome varieties.—*U.S. Colombia*.

FIG.—*Floral Mag.*, 2 ser., t. 32; *Lindenia*, ii. t. 55; *Vitch's Man. Orch. Pl.*, ii. p. 22; *Gard. Chron.*, 3 ser., xii., 1892, p. 365, f. 59; *Orchid Review*, i. p. 273, f. 14.

C. MENDELII BELLA, *Williams et Moore*.—This fine variety is one of the numerous gems flowered by G. Hardy, Esq., of Pickering Lodge, Timperley. The sepals and petals are blush white; the petals have a pale median line. The upper part of the lip and the throat are a rich golden yellow, veined and bordered with paler yellow, while the lower part is of a dark mauve-lilac veined with white. Flowers in early summer.—*U.S. Colombia*.

FIG.—*Orchid Album*, v. t. 225.

C. MENDELII "DUKE OF MARLBOROUGH," *Rehb. f.*—A large-flowered and high-coloured variety, having the sepals and petals rosy-purple, lip large and brilliantly coloured.—*U.S. Colombia*.

FIG.—*Reichenbachia*, vol. i. t. 15.

C. MENDELII GRANDIFLORA, *Williams et Moore*.—A magnificent variety of this species, with flowers eight inches across. The sepals and petals are white, of fine substance, and very broad, the lip broad and well fringed, rich magenta-rose, white and frilled at the edge, the throat lemon yellow marked with pale magenta-rose lines; it flowers in May and June.—*U.S. Colombia*.

FIG.—*Orchid Album*, i. t. 3.

C. MENDELII JAMESIANA, *Hort.*—A very beautiful form, having deep blush sepals and petals, the latter marked at the tips with a bright magenta stripe, widest towards the upper end; the lip is bright amethyst, the throat yellow veined with dull purple.—*U.S. Colombia.*

FIG.—*Orchid Album*, iv. t. 178.

C. MENDELII SUPERBISSIMA, *Hort.*—This gorgeous variety was first flowered by R. Smith, Esq., Brentham Park, Stirling, and is probably the finest form of this beautiful *Cattleya* in cultivation. The flowers are very large, and of fine substance; the sepals and petals broad, pale blush colour, the lip rich, bright amethyst, much crisped and frilled at the edge, and the throat rich yellow.—*U.S. Colombia.*

C. MEYERI.—See *C. LUTEOLA*.

C. "MISS HARRIS," *N. E. Brown*.—This handsome hybrid is the result of a cross between *C. Mossiae* and *C. Schilleriana*, obtained by the late Dr. Harris, of Lamberhurst. The flowers are said to be like those of *C. Schilleriana* *concolor* in form and size, but are rosy-purple in colour. The lip is rich magenta-purple, with darker veins at the front lobe, while the side lobes are light rosy-purple with darker veins.—*Garden hybrid.*

FIG.—*Journ. of Hort.*, xix., 1849. p. 309. f. 38.

C. MITCHELLII, *Rehb. f.*—This fine hybrid is the result of a cross between *C. quadricolor* and *C. guttata Leopoldii*, obtained by Mr. Mitchell, gardener to the late Dr. Ainsworth, of Manchester. It is of compact growth, the stems being about a foot long, each bearing two leaves, of a dark green colour, and considerably narrower than those of *C. guttata Leopoldii*; the sepals and petals purplish violet, with the front lobe deep purple-magenta, and the lateral lobes light purple tipped with the same colour as the front lobe of the lip; disk orange, edged with white at the sides. It is a very distinct plant, and will form a fine addition to this lovely class.—*Garden hybrid.*

FIG.—*Floral Mag.*, 2 ser., t. 337.

C. MODESTA.—See *C. LUTEOLA*.

C. MORGANIAE, *Williams et Moore*.—This is one of the most chaste of all *Cattleyas*, and is named after the late Mrs. Morgan, of New York, a great admirer of Orchids. In growth it resembles *C. Mendelii*, and it flowers quite as freely. The sepals and petals are snow-white, the lip white, beautifully fringed, and having a distinct bright magenta blotch towards the apex, the throat orange-coloured with darker radiating stripes; its flowers are produced in May and June, and last six weeks in beauty.—*U.S. Colombia.*

FIG.—*Orchid Album*, i. t. 6.

C. MOSSIAE, *Hooker*.—This magnificent and free-flowering species has oblong furrowed stems, which grow a foot or more high, are surmounted by solitary oblong leaves, and spikes of several magnificent flowers; the plants bloom from March to August, and if kept in a cool place last in perfection for three or four weeks. The flowers are very large, a single one being six inches across, in some of the varieties still larger, and three or four growing on one

spike. There are many varieties of this plant, with blossoms of various shades of colour, from white and pale pink to crimson and rose purple. This species makes a noble plant for exhibition. We have seen specimens of *C. Mossiae* at the Chiswick and Regent's Park Shows with from thirty to forty flowers upon a single plant. Many of the varieties here recorded bloomed in the rich collection of Robert Warner, Esq., who at one time made this species one of his especial favourites, and where we have seen as many as six hundred of these beautiful



CATTLEYA MOSSIAE.

flowers open together. Many of these forms are very distinct. The best of those here noticed were named and described in the *Gardeners' Chronicle* in 1864 by the late Mr. Thomas Moore, of the Chelsea Botanic Garden. The varieties are all from the same country as the parent.—*La Guayra*.

FIG.—*Bot. Mag.*, t. 3669; *Bot. Reg.*, 1840, t. 58; *Gard. Chron.*, N.S., **xx**, 530, fig. 89; *Orchid Album*, vi. t. 246; *Hook. 1st Cent.*, t. 29; *Gard. Chron.*, N.S., **xxvi**, 1886, p. 401, f. 81; *Veitch's Man. Orch. Pl.*, ii. p. 23; *Revue Hort. Belg.*, 1893, p. 200.

C. MOSSIAE ALBA.—See *C. WAGENERI*.

C. MOSSIAE ALEXANDRA, *Williams*.—A very distinct and beautiful variety of the light-coloured section; sepals and petals pale blush; lip white, distinctly spotted and veined with bright magenta; throat rich bright orange marked with crimson-purple. These markings on the white ground give to the flower a most distinct and charming appearance.

C. MOSSIAE ARNOLDIANA, *Hort., Sander*.—This variety was flowered in 1884 by the late R. P. Percival, Esq., Southport. The lip is rather narrow, the basal part having dark purple stripes, the middle and anterior part, excepting the extreme front, with a light mid line and very fine orange stripes on a lighter ground; front portion sulphur yellow, with a very few small purple lines.

C. MOSSIAE AUREA, *Moore*.—A small-flowered variety, with the sepals and petals blush, less spreading than in most other forms; lip small, strongly marked with buff-orange at the base, extending forward at the front edge, and having broken violet-rose lines in the centre, surrounded by a very broad pale margin, which is almost white inwards, and tinged with blush on the extreme edge.

C. MOSSIAE AUREA GRANDIFLORA, *Moore*.—A large-flowered form; sepals and petals blush; lip marked with a bar and a few broken lines of violet-rose, very much stained with orange at the base, and towards the upper part of the margin.

FIG.—*Orchid Album*, vii. t. 289.

C. MOSSIAE AUREO-MARGINATA, *Moore*.—Large-flowered; sepals and petals deep blush; lip with deep violet-rose centre and yellow base, the yellow stain continued so as to form a broad margin to the upper expanded portion of the lip.

C. MOSSIAE BLAKEI, *Moore*.—Sepals and petals deep blush, the latter frilled towards the points; lip orange-buff at the base, and mottled violet-rose in front, the markings passing out nearly to the edge, so that there is no sharply-defined pale frill.

C. MOSSIAE BOUSIESIANA, *Lind. et Rodigas*.—A variety with the sepals and petals transversely veined and marbled with rosy purple, named in honour of M. Le Comte de Bousies, a great Belgian Orchid amateur.

FIG.—*Lindenia*, iv. t. 185.

C. MOSSIAE COMPLANATA, *Moore*.—A large-flowered variety, remarkable for the almost total absence of frilliness on the petals, and especially on the lip; sepals and petals rather deep blush; lip broad and spread out at the apex, a good deal stained with orange at the base, but faintly mottled and veined with purple over the centre, leaving a broad pale blush-tinted edge.

C. MOSSIAE CONSPICUA, *Moore*.—Large-flowered; sepals and petals blush; lip richly marked with violet-rose, dashed with orange at the base, and having an irregular broadish pallid border; it blooms in great profusion.

C. MOSSIAE "COURTAULDS' VAR.", *Reichb. f.*—Prof. Reichenbach thus describes this var. in the *Gard. Chron.*, 1888, iii. p. 681:—"This is a wonderfully grand thing. The sepals are like those of *C. Mossias*, Nalder's var., rose with dark purple margin. The fine petals have a nearly whitish central mid-area and much darker radiating partly-confluent lines on the margins. The lip has its

orange mid-zone rose coloured above, with a bluish purple central space, whitish sulphur coloured on the anterior sides, and rose on the median zone. The characteristic mauve lines are not to be seen. I have to thank S. Courtauld, Esq., Bocking Place, Braintree, for this grand beauty."

C. MOSSIAE DECORA, *Williams*.—A distinct variety having the petals streaked at the tips with crimson, lip rich orange yellow at the base over which is spread a layer of deep crimson passing into rosy lilac, margined with rose.

FIG.—*Orchid Album*, ix. t. 421.

C. MOSSIAE ELEGANS, *Moore*.—Rather small in size, but lively and effective in colouring; sepals and petals deep blush; lip small, with bright orange-yellow base, and the central portion marked sparingly with veins of violet-rose surrounded by a broad pale edge.

C. MOSSIAE FIMBRIATA, *Moore*.—One of the largest-flowered of the whole series, and prettily though not heavily marked; sepals and petals rather pale blush, the latter broad and a good deal frilled throughout; lip very much frilled, marked with a bright orange stain at the base, and in front decorated with broken veins of violet-rose on a white ground, the extreme edge being blush; the lip is thus distinctly edged with blush.

C. MOSSIAE FLAMMEA, *Moore*.—Rather small, but richly coloured, the petals and lateral sepals less spreading than in other forms; sepals and petals deep blush, the latter frilled towards the tip; lip small, very deep rich orange at the opening, dense violet rose in the centre, the orange intermingling therewith and producing a fiery crimson, the purple broken up with white in front, and irregularly margined with blush.

C. MOSSIAE GRANDIFLORA, *Moore*.—A large-flowered variety; sepals and petals blush, the petals less frilled than in some forms; lip a deep rich purple-rose, slightly stained at the base with orange, and having a narrow even edge of pale blush.

FIG.—*Warner, Sci. Orch. Pl.*, iii. t. 16, fig. 1.

C. MOSSIAE GRANDIS, *Moore*.—The largest of all the forms in respect to the size of its lip; sepals and petals pale blush; lip mottled violet-rose, with an irregular blush-coloured edge; the base stained with buff-orange. This is beyond doubt one of the finest varieties of *C. Mossiae*.

C. MOSSIAE HARDYANA, *Williams et Moore*.—The most remarkable form of *C. Mossiae* that has yet come under our notice. It is named in honour of G. Hardy, Esq., Timperley. The flowers are large, having very irregular markings; sepals and petals pale blush rose, irregularly blotched and veined with magenta purple; lip beautifully frilled, the front portion striately marked with rich magenta-purple, surrounded by an irregular margin of white, traversed by veins of pale purple; throat orange-yellow. Like the rest, it flowers during the summer months.

FIG. *Orchid Album*, iii. t. 123.

C. MOSSIAE HELENÆ, *Moore*.—Remarkable for its high-coloured flowers; sepals and petals deep blush, mottled with dark purple rose; the lip a rich motley purple, orange at the base, and parti-coloured at the margin.

C. MOSSIAE KERMESINA MARGINATA, *Williams*.—This magnificent variety has rich peach-coloured sepals and petals, with a large beautifully-fringed carmine lip, edged with white.

C. MOSSIAE LAWRENCEANA, *Moore*.—Large-flowered, with erect stalks; sepals and petals blush, the petals very broad and considerably frilled; lip large, rich deep violet-rose, slightly stained with orange in the interior, veined and mottled in front, with a narrowish and nearly even frill of blush. It is in the way of the variety *splendens*, but rather smaller in the lip, with the throat more expanded.

C. MOSSIAE MAGNIFICA, *Williams*.—In this variety the flowers are of a very fine form, from eight to nine inches in diameter; sepals and petals of a deep rose colour; lip orange, streaked with purple. Like all the varieties of *C. Mossiae*, if kept free from the damp, it will remain a long time in bloom.

C. MOSSIAE MAJESTICA, *Williams*.—This is a remarkably fine flower; the sepals and petals are broad, the latter measuring upwards of nine inches from tip to tip, and of a dark rose-colour; lip large and spreading, having the edge beautifully fringed; ground colour dark rose, stained at the base with soft orange, and variously blotched and streaked in front with violet-purple. In habit of growth it is also very distinct; the pseudobulbs are about three inches high, bearing a broad single leaf some six inches long.

C. MOSSIAE MARIANÆ, *Moore*.—Small-flowered, but very distinct and chaste, and very rare; sepals and petals white; lip with a bright yellow stain at the base, prettily mottled with violet-rose in the centre, and broadly and evenly margined with white. Although this variety is not so large-flowered as many others, it is one of the most elegant and pleasing of all the kinds, and is worthy of a place in every collection.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 24; *L'Orchidophile*, 1892, p. 113.

SYN.—*C. Mossiae testalis*.

C. MOSSIAE MARMORATA, *Moore*.—One of the finest light-coloured sorts, and one of the largest-flowered; sepals and petals pale blush, the latter very broad; lip large, light rose, broken up into marbled markings covering the whole surface, except a narrow fringe at the edge; it is a good deal stained with deep orange at the base, and the margin is not only strongly frilled, but conspicuously fringe-toothed.

C. MOSSIAE MC MORLANDII, *Williams*.—A fine variety, growing about a foot high, and having dark green foliage. The flowers are about six inches in diameter, the sepals and petals of a beautiful light rose, the lip yellow and fringed; it blooms in June and July, and remains three or four weeks in perfection. Very distinct, and makes a fine exhibition plant.

FIG.—*Warner's, Sel. Orch. Pl.*, iii. t. 16.

C. MOSSIAE MOOREANA, *Warner*.—A beautiful variety, well marked by the clearly-defined narrow white border of its lip, in the way of the var. *Marianae*; sepals and petals very pale blush, lip dense violet-rose, moderately stained with orange at the base, and having a narrow even frill of white.

C. MOSSIAE NALDERIANA, *Rchb. f.*—This variety is, according to Prof. Reichenbach, "an astonishing beauty." Its general colour is a peculiar rose-purple, with a slight greyish hue; the sepals and petals are of a much darker purple, which in the sepals is a border, and in the petals quite a distinct marking; there are two similar dark bands converging before the apex, leaving a purple rosy disk, and a similar margin at nearly equal distances.—*Venezuela*.

C. MOSSIAE NAPOLEONIS, *Moore*.—A very telling variety from its roseate tinge and the erect habit of its full-sized flowers; sepals and petals deep blush; lip large, of a mottled purple in front, and deep-orange at the base, with a broad margin of pale blush.

C. MOSSIAE PEETERSII, *Rchb. f.*—"The flower of this variety is of a very warm dark lilac-purple colour. The anterior disk of the lip has numerous confluent much darker lines. Light purple oblique lines run over the side lacinae. There is a small space of lightish yellow on each side, between the lines of the anterior disk. It was first flowered in 1885 by Mr. A. A. Peeters, of Brussels."—Reichenbach in *Gardeners' Chronicle*, 1888, 3 ser., iv. p. 6.

SYN.—*C. Peetersii*, *André*.

C. MOSSIAE POTTSII, *Williams*.—A most lovely and unique variety of this ever-varying species; it was bloomed in 1884 by the late Arthur Potts, Esq., of Chester. The flower is about seven inches in diameter; the petals are broad blush, beautifully feathered in the centre with a broad band of magenta-purple, most irregular in shape; the sepals are marked in the same way, the lip is large and broad, its anterior part deep magenta-purple, broadly margined with blush white; throat yellow.

C. MOSSIAE PURPURATA, *Moore*.—Large-flowered; sepals and petals deep blush; lip large, of a very dense and nearly uniform violet rose, orange at the base, and having a pale frill or margin.

C. MOSSIAE REINECKIANA, *Hort*.—A very chaste and rare form, having flowers seven inches in diameter; sepals and petals of fine substance, pure white; lip lilac-mauve, beautifully fringed; throat bright yellow veined with crimson-purple. A most wonderful plant of this was exhibited by G. Hardy, Esq., Timperley, Manchester, at the Whit-week Show, 1893, for the Williams Memorial Medal, which it deservedly gained; the plant had 16 fully expanded flowers, and was a good variety; great credit was due to Mr. Holmes, the gardener, for the way in which this plant was cultivated.

FIG.—*Reichenbachia*, 2nd ser., vol. ii. t. 52; *Orchid Album*, x. t. 461.

C. MOSSIAE ROTHSCHILDIANA, *Moore*.—One of the larger-flowered forms; sepals and petals blush; lip very bright orange at the base, with rosy purple lines and splashes over the centre, and a broad irregular white margin; the petals are finely denticulate.

FIG.—*Warner*, *Srl. Orch. Pl.*, iii. t. 16, fig. 3.

C. MOSSIAE SPLENDENS, *Moore*.—Large-flowered; sepals and petals blush; lip rich full purple-rose, with orange base, the margins blush, and very much frilled.

C. MOSSIAE STRIATA, *Moore*.—A curiously-marked sort; sepals and petals deep blush, with paler veins, producing a motley striated appearance; lip motley rose, striped throughout with dark purple rose, the margin paler and venosely striated, the orange tint confined to the base.

C. MOSSIAE SUPERBA, *Moore*.—Dark blush sepals and petals, the latter narrow and very slightly frilled; lip large, prominently stained with deep orange at the base, the front part brighter, and the centre veined and somewhat mottled with violet-rose, leaving a broadish irregular pale margin.

C. MOSSIAE VENOSA, *Moore*.—A very handsome variety, distinct-looking from there being very little orange present, and from the markings of deep violet rose being evenly distributed; sepals and petals deep blush, the petals becoming paler towards the margin; lip marked with lines of violet-rose, beautifully fringed, extending nearly to the margin; the base very slightly stained with orange.

C. MOSSIAE VESTALIS.—See *C. MOSSIAE MARIANAE*.

C. MOSSIAE VICTORIA, *Moore*.—A very large and beautiful variety; the sepals and petals large, of a blush tint; the lip deep purple-rose, with bold orange markings at the base, and narrow even margin of blush.

C. MOSSIAE WILLIAMSII, *Moore*.—A large-flowered variety; sepals and petals blush white; lip finely mottled with rose, stained with orange at the base and having a broad pale margin; the flowers are amongst the palest in the series, and very beautiful.

C. NOBILIOR, *Rehb. f.*—A pretty species in the way of *C. Walkeriana*, but having larger oblong bulb-stems and a pair of oblong leaves; the sepals and petals are delicate rosy lilac, the lip of the same colour, having a large primrose-coloured blotch.—*Brazil*.

FIG.—*Ill. Hort.*, 3 ser., t. 485; *Gard. Chron.*, N.S., xix. 728, fig. 120.

C. PARTHENIA, *Bleu*.—This beautiful hybrid was raised by M. Alfred Bleu, of Paris, and is the result of a cross between *C. fimbriata* and *C. Mossiae*, the first-named parent itself being a hybrid between *C. amethystina* and *C. Aclandiae*. It is thus described by M. Bleu: "*Pseudobulbs* 20 c. (about 8 inches) long, fusiform, elongated and depressed, resembling in growth a young *Laelia Schilleriana*, sepals pure white, petals pearly-white undulated and lightly suffused with rose, lips fimbriated, porcelain white outside, throat sulphur yellow at the base marked with four carmine lines in the centre, front portion delicate violet-rose, striated with carmine." It flowers at different periods of the year.—*Garden hybrid*.

FIG.—*Lindenia*, vi. t. 276; *Reichenbachia*, 2 ser., ii. t. 67.

C. PEETERSII.—See *C. MOSSIAE* PEETERSII.

C. PERCIVALIANA, *Rchb. f.*—This is a distinct form of the *C. labiata* section, in the way of *C. Mossiae*, which it resembles very much in growth. The flowers are, however, smaller than in that species, but are darker and richer in colour in the best varieties. It is a plant that varies very much. The sepals and petals are deep blush, the lip much fringed, intense magenta-crimson margined with blush pink, the throat richly marked with crimson and golden yellow lines; it flowers in January and February.—*Venezuela*.

FIG.—*Orchid Album*, iii. t. 144; *Gard. Chron.*, N.S. xxi. 178, fig. 35; *The Garden*, 1889, xxxv. p. 532; *Reichenbachia*, i. t. 2.

C. PERCIVALIANA ALBA, *Hort.*—A pure white variety, first flowered by the late Mr. Percival in February, 1884, and exhibited by him at South Kensington shortly afterwards; the sepals and petals are pure white, and the lip white with an orange stain in the throat.—*Venezuela*.

C. PERCIVALIANA BELLA, *Rchb. f.*—The late Professor Reichenbach describes this in the *Gard. Chron.*, 1888, iii. p. 361, as follows: "A most remarkable *Cattleya* with very broad wavy petals. It is of the brightest purple colour; the sepals, petals, and anterior purple part of the lip are covered with very numerous scattered dark purple spots. It was sent to me by Mr. W. Bull in February last."—*Venezuela*.

C. PERCIVALIANA REICHENBACHI, *Lind. et Rodigas.*—A very highly coloured variety with the sepals and petals brilliant magenta, lip magenta-crimson with a paler margin, throat rich yellow veined with crimson.—*Venezuela*.

FIG.—*Lindenia*, i. t. 39.

C. PORPHYROGLOSSA, *Linden et Rchb. f.*—This is a most distinct species, similar in growth to *C. bicolor*; the sepals and petals are Indian red suffused with yellow, the lip entirely covered by lamellae and papulae, bright amethyst, the lateral lobes covering the column pure white.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 171, fig. 1, t. 172, fig. 2.

C. PORPHYROGLOSSA PUNCTULATA, *Rchb. f.*—This variety is described by the late Professor Reichenbach as follows: "It is like *Cattleya guttata* with larger flowers. Both the sepals and petals are light horse-chestnut brown. The lip is very fine. Its best and leading character is that the stalk of the anterior lacinia is crenulate or serrate at the edges. There is a great abundance of the finest keels and warts on the central lacinia shining like a ruby. Similar productions appear on the apex of the side laciniae. The column is white at the back, yellow in front, where it is covered with purple stripes" (*Gard. Chron.*, 1887, 3 ser., ii. p. 98).—*Native Country not stated*.

C. PORPHYROPHLEBIA, *Rchb. f.*—A hybrid between *C. intermedia* and *C. superba*, raised by Mr. Seden in the nurseries of Messrs. J. Veitch and Sons, Chelsea. Flowers four to five inches in diameter, sepals and petals pale lilac; anterior portion of the lip rich amethyst purple, striped with pale purple. Throat yellow divided by a purple band.—*Garden hybrid*.

C. PUMILA, *Hooker*.—A charming free-blooming species with very short oblong stems, about six inches high, bearing a solitary oblong-lanceolate leaf, and flowering in September, remaining for three or four weeks in perfection. The blossoms are proportionately large, deep purplish lilac with a purplish crimson lip, often edged with white. It is similar to *C. marginata* in its habit of growth. This plant succeeds best in the cool-house.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3656; *Bot. Reg.*, 1844, t. 5; *Warner, Sel. Orch. Pl.*, ii. t. 32; *Gard. Chron.*, 1854, 804, with fig. (monstrous form); *Xenia, Orch.*, ii. t. 115; *Veitch's Man. Orch. Pl.*, ii. p. 78; *L'Orchidophile* 1890, p. 59.

SYN.—*Laelia pumila*.

C. PUMILA MAJOR.—See *CATTLEYA MARGINATA*.

C. QUADRICOLOR, *Lindley*.—A very rare and pretty species, which grows about ten inches high, and produces its blossoms on the young growths in May and June. The stems are narrow compressed monophyllous, the leaves strap-shaped, and the charming flowers have the sepals and petals light rose and the lip rosy crimson edged with white, the throat yellow. There are two varieties of this plant in cultivation.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5504; *Batem. 2nd Cent.*, t. 108; *Ill. Hort.*, t. 514.

C. QUINQUECOLOR, *Hort*.—This pretty variety is the result of a cross between *C. Aclandiae* and *C. Forbesii*. The sepals and petals are light olive green spotted with brown and dark chocolate; the lip is carmine-rose veined with deeper rose, and having an elongated bar of yellow on the disk.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 511.

C. REGNELLI.—See *CATTLEYA SCHILLERIANA REGNELLI*.

C. RESPLENDENS, *Rehb. f.*—The growth of this plant somewhat resembles that of *C. granulosa* and the flowers those of *C. Schilleriana*. The dull olive-brown sepals and petals are spotted with purple, as in *C. guttata Leopoldii*; the lip is white with warm amethyst keels and small warts of the same colour; its cuneate bilobed stalked mid-lacinia has numerous rough warts in the central part, and many keels on the lateral parts, which are externally toothed, and its side laciniae are much developed and very acuminate. This is supposed to be a natural mule between *C. granulosa* and *C. Schilleriana*.—*Brazil*.

C. REX, *O'Brien*.—This novelty has been imported by the Horticulture Internationale of Brussels, and is said to be a very distinct and beautiful *Cattleya*. We have not seen the plant in flower, so give the original description in the *Gardeners' Chronicle*, 3rd series, 1890, viii. p. 684: "The sepals are three and a half inches long and three-quarters of an inch in width, white tinged with primrose yellow, petals ovate, three and a half inches in length, two and a half inches in width, creamy white, the edges wavy and slightly notched; the lip, which is obscurely three-lobed, is a wonderful piece of colouring, the convolute side lobes forming the tube which falls over the pure white column are creamy white on the edges and yellow streaked with red beneath the interior of the tube, and the upper part of the front lobe are of the richest crimson veined in

a beautiful manner with golden yellow, the front lobe of the labellum which is finely expanded and edged with a pure white fringe is crimson of various shades all worked in to form a richly coloured marbling."—*Native Country not stated.*

FIG.—*Lindenia*, vi. t. 265; *Journ. of Hort.*, xxv., 1892, p. 170, f. 24; *Gard. Chron.*, 3 ser., ix. 1891, p. 273, fig. 61.

C. ROLLISSONI.—See *CATTLEYA WARSCEWICZII DELICATA*.

C. SCHILLERIANA, *Rehb. f.*—A charming species, much like *C. Aclandiae* in growth; the foliage is, however, darker and rounder. It blooms during the summer months from the young growths, the flowers being large, remaining in perfection three or four weeks, if kept dry. They are deep rosy mahogany colour, in some forms spotted, the lip having darker stripes and shadings and being edged with pink.—*Brazil.*

FIG.—*Bot. Mag.*, t. 5150 (var. concolor); *Jennings, Orch.*, t. 25; *Flore des Serres*, t. 2286; *Arnia Orch.*, ii. t. 111 (white-lipped); *Florist*, xii. 193, t. 153 (?); *Gartenflora*, 1889, t. 1290; *Journ. Hort.*, xxv. 1892, p. 187, f. 26 (var. Lowii).

C. SCHILLERIANA REGNELLI, *Williams.*—This is sometimes considered distinct from the preceding, but although well marked, it is evidently very closely allied to that plant. The stems are usually about four or five inches high, the leaves in pairs, or sometimes in threes, thick, fleshy, and dark green. The flowers are borne upon upright spikes, from three to five in a cluster, measuring nearly four inches in diameter; sepals and petals somewhat oblong, spatulate, green suffused with olive green and spotted with brownish purple; the front lobe of the lip large, rich amethyst shaded with purple and bordered with white, the base yellow, streaked with purple. It should be placed upon a block with a little sphagnum moss, and suspended from the roof at the warmest end of the *Cattleya* house, shaded from the direct rays of the sun, and supplied with water liberally during the growing season; during the winter less heat will suffice, but it must by no means be allowed to get dry. It is a very desirable plant, as it blooms twice in the year, first in the month of July, and again about the end of September or the beginning of October.—*Brazil.*

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 22.

SYN.—*C. Regnelli*.

C. SCHOFIELDIANA, *Rehb. f.*—This is a most handsome and distinct addition to this popular genus, and was first flowered by G. W. Law-Schofield, Esq., of Rawtenstall, near Manchester, in honour of whom it was named by Professor Reichenbach. It is an evergreen species, having stems and leaves similar to those of *C. guttata Leopoldii*, but not quite so strong as those of that plant. The sepals and petals are pale tawny yellow, having a flush of purple and a tinge of green, the whole of the surface densely spotted with crimson-purple; the lip is two and a half inches long, covered with lamellae and papulae of a bright magenta-purple, the lateral lobes white tinged with rose; it flowers in August.—*Brazil.*

FIG.—*Orchid Album*, ii. t. 93.

SYN.—*C. granulosa Schofieldiana*.

C. SCHRÖDERAE.—See *CATTLEYA TRIANAE SCHRÖDERAE*.

C. SCHRÖDERIANA, *Rchb. f.*—A very distinct and curious *Cattleya*. The stems are nearly four inches high having two well-marked joints, two leaved, the leaves oblong-ligulate. The flowers are about the size of a good *Lasia majulis*, of a mauve-purple colour, somewhat in the way of *C. dolosa*, but having thinner bulbs of equal thickness throughout, and not spindle-shaped as in that species; it flowers during the summer months.—? *Brazil*.

C. SCITA, *Rchb. f.*—This distinct and beautiful *Cattleya* was imported by us with a lot of *C. intermedia*, and is thus described by the late Prof. Reichenbach in the *Gard. Chron.*, 1885, ii. p. 489: "The sepals and broad waxy petals are of the lightest ochre, with a few marginal, very light purple shades, and some small blotches of the same colour scattered in a most irregular way over those organs. The lip has its lateral laciniae half round, projecting in antrorse sharp angles. The general colour of them is lightest sulphur, anterior edges of the laciniae purple, disk white with some purple lines. Claw of the lip broad linear, entire, long anterior blade transverse, oblong, emarginate in front, toothletted on the sides. The whole of this part, excluding, however, the white base of the claw, is of the finest purple, and the asperities on the disk teach us clearly the affinity with *Cattleya guttata*. The column is of the lightest yellow, with some fine purple lines and spots. It is exceedingly elegant, for the noble simplicity of its fine colours."—*Brazil*.

C. SEDENIANA, *Veitch*.—A beautiful Veitchian hybrid, the parents being *C. crispata* and *C. granulosa*; it is tall in habit; the flowers are large and handsome; the sepals and petals are light rose, shaded with green, and the lip has a white fimbriated margin, and a purple centre with darker veins. A desirable plant.—*Garden hybrid*.

C. SKINNERI, *Bateman*.—A beautiful and free-flowering plant, growing about a foot high, and blooming in March, April, and May. The blossoms are rosy purple, and remain three weeks in perfection, if kept dry. This fine species of *Cattleya*, when grown strong, will produce as many as nine or ten flowers on a spike. It is one of the finest Orchids that can be grown for the May exhibitions, the colour being distinct and different from that of any other *Cattleya*. One of the finest plants of this species we ever saw was flowered by G. Hardy, Esq., Pickering Lodge, Timperley, and had numerous spikes, some bearing as many as ten flowers; it was in beautiful health, splendidly flowered, and measured some three feet in diameter. This plant was named *C. Skinneri oculata*.—*Guatemala, Costa Rica*.

FIG.—*Bot. Mag.*, t. 4270; *Bateman, Orch. Mer. et Guat.*, t. 13; *Parton, Mag. Bot.*, xi. 193, with tab.; *Gard. Chron.*, N.S., xxi. 548, fig. 107; *id.*, 3 ser., v. 1889, p. 685, fig. 113; *Veitch's Man. Orch. Pl.*, ii., p. 47.

C. SKINNERI ALBA, *Rchb. f.*—A most charming and delicate form of this fine *Cattleya*, having pure snow-white flowers, produced in the same way as those of the type. We received a grand spike of this from Mr. Hill, gardener to Lord de Rothschild, Tring Park, Tring.—*Costa Rica*.

FIG.—*Orchid Album*, iii. t. 112.

C. SORORIA, *Rchb. f.*—A distinct and meritorious species imported by us in 1886 from Brazil, together with *C. velutina* and *C. bicolor*. Pseudobulbs

slender terete two-leaved, leaves oblong acute from three to five inches long, flowers three or more on a spike, about three inches in diameter, sepals oblong acute, obtuse undulate on the edges, all pale magenta, lip three-lobed pale delicate rose streaked with lines of deep magenta, throat yellow. Flowers spring and autumn.—*Brazil*.

FIG.—*Orchid Album*, vii. t. 307.

C. SPECIOSISSIMA ERNESTII, *Hort.*—We received this splendid variety from T. Statter, Esq., Stand Hall, Whitefield, Manchester. Sepals and petals deep magenta, lip deep magenta, profusely spotted with deep mauve. This is the finest variety of *C. speciosissima* we have ever seen, being extremely rich in colour.—*Venezuela*.

C. SPECIOSISSIMA BUCHANANIANA, *Williams et Moore.*—A magnificent variety of this old favourite, named after J. Buchanan, Esq., Edinburgh, who has a large and select collection of Orchids; the flowers measure about eight inches in diameter, sepals bold and of a fine form, rose coloured, petals very large, ovate $3\frac{1}{2}$ inches long, and about three inches across in the widest part, lip deep magenta fading off towards the upper margin of the tube, throat beautifully marked on either side with blotches of yellow passing into stripes where it joins the median bar of pale purplish rose, which runs down the centre of the throat. Blooms in autumn.—*Venezuela*.

FIG.—*Orchid Album*, vi. t. 261.

C. SPECIOSISSIMA LOWII, *Anderson.*—This is a very handsome form of the *C. labiata* section. The stems are oblong and deeply channelled, each bearing an ovate shining leaf; flowers large, frequently measuring eight inches in diameter, borne upon a somewhat short spike three or four together; sepals and petals broad soft flesh-colour, the latter being the broadest with erose edges; the lip forms a circle, through closing over the column, the front portion being of an intense amethyst colour, varied with white and yellow markings towards the centre, where are also several lines of bright amethyst. It is a gem amongst *Cattleyas*, but it is not so free-flowering as some of the other kinds.—*Venezuela*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 34.

SYN.—*C. labiata Luddemanniana*.

C. SPECIOSISSIMA MALOUANA, *Lind.*—A distinct variety with rosy magenta flowers; the lip is large and beautifully marked with veins and spots of a darker colour, throat white, flowers in spring.

FIG.—*Lindenia*, i. t. 47.

C. SPECIOSISSIMA REGINA, *Rehb. f.*—A distinct and handsome variety flowered by Sir T. Lawrence, Bart., in 1884; the ovary, column, sepals and petals are of a rich purple colour; lip dark mauve-purple, having the two lateral yellow spots usual in the type. The late Professor Reichenbach thought this one of the grandest *Cattleyas* ever seen.—*Venezuela*.

C. SPECTABILIS.—See *CATTELEYA MARGINATA*.

C. SPHENOPHORA.—See *CATTELEYA GUTTATA*.



CATTLEYA TRIANAE.
(From the *Gardeners' Chronicle*.)

C. SUPERBA, *Lindley*.—This truly beautiful plant is a slow-growing species, usually attaining ten inches high, with club-shaped stems and a pair of short thick ovate-oblong obtuse leaves. It flowers in June and July, and the blossoms, which are very fragrant, and of a deep rose colour, with a rich magenta-crimson lip, will remain in bloom for three weeks; it produces three to six flowers on a spike, and is a very distinct species. It requires plenty of water at all times, and should never be allowed to get into a shrivelled state—if so, it is very difficult to restore it to a healthy condition; it requires more heat than the other *Cattleyas*, and is best grown on a block of wood or basket with live sphagnum moss, but is difficult to propagate.—*British Guiana*.

FIG.—*Bot. Mag.*, t. 4083; *Scrt. Orch.*, t. 22; *Parson Mag., Bot.* ix. 265, with tab.; *Warner, Scrt. Orch. Pl.*, i. t. 24; *Flore des Serres*, t. 926; *Hook. 1st Cent.*, t. 31.

C. SUPERBA ALBA, *Rolfe*.—"A most beautiful albino has now appeared, having been discovered by Mr. E. S. Rand, of Para, Brazil, who has sent a flower to Kew. It is evidently a magnificent thing, as Mr. Rand very pertinently remarks. Fancy a plant of *C. superba*, with flowers of the purest white, and you have a good idea of our novelty."—*Brazil*.

C. SUPERBA SPLENDENS, *Lemaire*.—A distinct variety of the type. The flowers are much larger, the sepals and petals being considerably longer than in the form originally introduced; sepals and petals deep rich purplish rose; lip white at base, magenta-crimson in front, and having in addition several lines or crests of golden yellow towards the middle. It is altogether a very distinct and handsome variety, and forms a fine companion to the type when the two are grown side by side.—*Rio Negro*.

FIG.—*Ill. Hort.*, t. 605; *Orchid Album*, i. t. 33; *Reichenbachia*, i. t. 32.

C. TRIANAE, *Linden et Rehb. f.*—This lovely winter-blooming *Cattleya*, of which there are an immense number of varieties, all of them beautiful, and some of them particularly so, resembles *C. Mossiae* in its habit of growth, but generally attains larger dimensions. The leaves are of a light green. The flowers are produced during the winter months, and measure six to eight inches in diameter. The sepals and petals are usually blush; the lip blush, or pale rose colour outside; the throat orange or yellow, and the front rich rosy purple more or less intense. This is considered by many to be a variety only of *C. Warszewiczii*; but whether a species, sub-species, or variety, it is a really charming Orchid. The numerous varieties all come from the same country.—*New Grenada*.

FIG.—*Orchid Album*, i. t. 45; *Dict. of Gard.*, 283, fig. 386; *Revue Hort. Belge*, 1885, p. 49; *L'Orchidophile*, 1889, p. 209, 1891, p. 81; *Veitch's Man. Orch. Pl.*, ii. p. 26.

C. TRIANAE ALBA, *Hort.*—A chaste and beautiful variety having pure white flowers, saving the yellow stain on the lip; this is a very rare plant.—*U.S. Colombia*.

FIG.—*Lindenia*, i. t. 29; *Reichenbachia*, ii. t. 81.

C. TRIANAE ATALANTA, *Marshall*.—This extremely fine variety was flowered by Mr. Wilson, gardener to W. Marshall, Esq., and was exhibited at one of the meetings of the Royal Horticultural Society, when it received a first-

class certificate. The sepals are upwards of three inches long and about an inch broad, white shaded with rose; the petals are of the same colour, but broader and less pointed; the lip three inches long, pale rose with a broad band of orange in the throat.

C. TRIANAE BACKHOUSIANA, *Backhouse*.—A very chaste and beautiful variety, which was imported by Messrs. Backhouse and Son, of York. The sepals and petals are blush pink; the lip large, and having a large bright magenta stain on the anterior part; the throat marked with pale yellow. This is one of the finest of the dark varieties, and bears very large flowers.

FIG.—*Journ. of Hort.*, xiii. 1886, p. 337, f. 51.

C. TRIANAE COLEMANI, *Williams*.—This fine variety was flowered by E. J. Coleman, Esq., Stoke Park, Slough. The flowers measure eight inches across, the sepals and petals tipped with rose; the lip is prettily fimbriated, and of a deep rose colour, and the throat beautifully striped with various shades of yellow. This is a very free-flowering plant, and a grand addition to the already large number of varieties of this species.

FIG.—*Floral Mag.*, 2 ser., t. 176.

C. TRIANAE CORNINGII, *Williams*.—A most beautiful variety, and one that should be in every collection. It grows about the same height as *C. Trianae*, and produces several large flowers on a spike; sepals and petals pure white, slightly tinged with pale rose; lip white, with a slight blotch of orange on the anterior part. This is one of the most delicate-looking forms of *C. Trianae* we have seen. It is named after E. Corning, Esq., of Albany, New York, a great admirer of this noble class of plants.

C. TRIANAE DODGSONI, *Williams*.—A grand variety, with flowers from eight to nine inches in diameter; sepals and petals pure white; lip deep violet-crimson, slightly margined with pale pink; throat orange-yellow. This variety was flowered in the collection of the late R. B. Dodgson, Esq., Beardwood, Blackburn, and is the most distinct of the light varieties we have yet seen. There have been several plants of *C. Trianae* sold under this name, but they have always proved inferior to this variety. When the Beardwood collection was sold by auction the original plant realised the large sum of 185 guineas.

FIG.—*Floral Mag.*, 2 ser., t. 64; *Orchid Album*, vi. t. 249.

C. TRIANAE ERNESTII, *Hort*.—A distinct variety with large irregular blotches of crimson purple on the extremities of the petals; lip richly coloured; from the collection of R. J. Measures, Esq., Camberwell.

FIG.—*Reichenbachia*, i. t. 43.

C. TRIANAE FORMOSA, *Williams*.—A very fine large-flowered variety of this favourite type. The sepals and petals are of a fine bold form, blush pink; the lip large, two and a quarter inches in diameter, rich rosy magenta with a fine frilled margin; throat orange, veined with deeper orange; it flowers in February.

FIG.—*Orchid Album*, iii. t. 108.

C. TRIANAE HARDYANA, *Rehb. f.*—This novelty is described by Professor Reichenbach as having white petals washed with a whitish purple, especially on the middle part; the anterior part of the lip is of the warmest purple, and has a light border of purple extending round the wavy margin, and there is a light ochre-coloured central line with two anterior streaks. This variety was first flowered by Geo. Hardy, Esq., Pickering Lodge, Timperley, in honour of whom it was named.

C. TRIANAE HILLII, *Williams*.—This beautiful variety was flowered in the collection of C. G. Hill, Esq., of Nottingham. It is a very fine and distinct sort, the flowers large, and of fine form; the sepals and petals are of pure white, the lip rich magenta, and the throat yellowish.

C. TRIANAE HOOLEANA, *Williams*.—This lovely variety was first flowered by the late A. Potts, Esq., Hoole Hall, Chester. The flowers are about five inches in diameter; sepals pale rosy purple, petals deeper tint, of same colour; lip rosy magenta on the upper side; anterior portion deep magenta purple; throat marked with a pair of curved cone-shaped blotches of a rich orange-yellow colour.

FIG.—*Orchid Album*, vi. t. 265.

C. TRIANAE IO, *Marshall*.—The flowers of this variety are of the full size; the sepals and petals are clear rose, the petals very finely serrated at the margins; the lip is large, rich deep purple shaded with violet, with a marginal band of rosy purple, the edges beautifully crisp; throat orange-coloured.

C. TRIANAE LEEANA, *Sander*.—A very large-flowered and distinct variety, named in honour of W. Lee, Esq., late of Downside, Leatherhead. The flowers are about seven inches in diameter; the sepals and petals three inches across, rosy lilac; the lip two inches in diameter in the fore part, deep magenta-mauve, faintly margined with lilac-rose; the throat is very large and open, and has the peculiarity of being striped with orange. This is one of the best of the large-flowered section.

C. TRIANAE MARGINATA, *Williams*.—A distinct and large-flowered variety, with the blossoms six inches in diameter; sepals and petals blush white; anterior portion of lip bright magenta-purple, broadly margined with white, and beautifully fringed; throat orange; very distinct and deliciously scented.

C. TRIANAE MASSANGEANA, *Rehb. f.*—A very distinct and beautiful variety, first flowered by M. D. Massange, Marche, Belgium. The sepals are pale rosy purple, longitudinally banded and striped with purplish magenta; petals variously striate in the direction of the venation deep rosy purple; lip rosy purple, striped diagonally with deeper purple; throat streaky orange, flushed with pale rose.

FIG.—*Orchid Album*, vi. t. 242.

C. TRIANAE OSMANNI, *Williams*.—This gorgeous variety produces very large flowers of great substance, and bears as many as five blossoms on a spike; they measure seven inches across; the sepals are one inch broad, the petals two and a half inches, both sepals and petals being of a bright rosy magenta

colour; the lip is large, two and a half inches across, of an intense magenta-crimson, having a velvety appearance, this brilliant colour being narrowly margined with the same colour as that of the sepals and petals. This colour is well carried back into the throat, terminating in an acute point, the throat being slightly marked with yellow. This variety which was flowered in the collection of the late R. B. Dodgson, Esq., Beardwood, Blackburn, under the care of Mr. Osman, after whom it is named, generally produces its blossoms a little later than the ordinary forms of *C. Trianae*. When the Beardwood collection was sold by auction the original plant was purchased by ourselves for the sum of 215 guineas, after a spirited competition.

FIG.—*Floral Mag.*, 2 ser., t. 361; *Warner's Sel. Orch. Pl.*, iii. t. 29.

C. TRIANAE PURPURATA, *Lind.*—A large and fine flower, sepals and petals deep rosy magenta colour, lip large intense rosy purple; throat deep orange.

FIG.—*Lindenia*, v. t. 229.

C. TRIANAE QUADRICOLOR, *Hort.*—A very high-coloured and charming variety, having broad and well-formed sepals and petals, which are of a bright rosy magenta colour; the lip is large and well formed, its anterior part intense magenta-crimson, the throat rich orange. The upper portion of the lip, which encloses the column, is of the same colour as the sepals and petals, but of a darker tint.

C. TRIANAE REGINAE, *Williams.*—Flowers large and compact, six inches in diameter; the sepals are three-fourths of an inch wide, the petals two and a quarter inches, pure white, slightly flushed towards the centre; lip two inches in diameter, bright magenta-purple, broadly margined with white; throat pale yellow.

FIG.—*Orchid Album*, x. t. 466.

C. TRIANAE ROSEA, *Hort.*—A most distinct and desirable kind, having deep rose-coloured sepals and petals, and a bright rosy lilac lip, which colour is carried back, and is suffused over its entire surface, saving a yellow blotch at the entrance to the throat. This variety forms a pleasing companion both to the light and dark coloured forms.

C. TRIANAE RUSSELLIANA, *Williams.*—A very fine form of this winter-blooming species. The sepals are three and a half inches long and upwards of an inch broad; the petals upwards of two inches broad, waved at the edges and recurved, white tinged with rose; the lip two inches across the centre, with the edge beautifully frilled, and the throat bright orange. The colouring, which is well carried back into the throat, is intense crimson-magenta, this colour being as dark at the margin as at the base. We saw a grand plant of this in Baron Schröder's collection at Staines, bearing sixteen flowers, and a most effective plant it was, being in vigorous health. This is without doubt one of the finest of the dark-lipped varieties.

FIG.—*Orchid Album*, v. t. 219.

C. TRIANAE SCHRÖDERAE, *Rehb. f.*—This distinct and lovely *Cattleya* is doubtless a geographical form. Prof. Reichenbach says "its perfume is very exquisite." This we can fully endorse; on every occasion we have met with the plant in flower, its perfume has attracted our attention. "You may easily distinguish it from genuine *Trianae*, whose shape it has, by the extraordinary crispation of both petals and lip; then by that well known orange area of the lip which sends a retrorse angle to the superior part of the lip, being unusually high and reaching far more towards the apex of the lip." The colour appears to vary from pure white through various shades of rose to light purple. Named in honour of the Baroness Schröder, the wife of one of our most distinguished orchidophiles. Flowers in April.

FIG.—*The Garden*, 1891, xl. p. 40.

SYN.—*C. Schröderae*, *Hort.*

C. TRIANAE SCHRÖDERAE ALBA, *Hort. Souder.*—A pure white variety of this lovely plant, which is adorned with a yellow blotch at the entrance of the throat.

FIG.—*Reichenbachia*, 2nd ser., vl. i. t. 17.

C. TRIANAE SCHRÖDERIANA, *Rehb. f.*—This variety has not been seen by us, but is said to be of a soft pale pink in the sepals and petals, the lower part of the lip of a glowing magenta colour, throat yellow; named in honour of Baron Sir J. H. W. Schröder, The Dell, Staines.

FIG.—*Reichenbachia* i. t. 46.

C. TRIANAE SPLENDIDISSIMA, *Williams et Moore.*—A most beautiful and chaste variety, having flowers six inches in diameter; sepals and petals pure white, the petals two and a half inches across, the sepals broad and of good substance; lip two inches across, rich deep magenta, beautifully frilled, the colour being carried to the margin, and well back into the throat, which is orange and white.

FIG.—*Orchid Album*, iv. t. 150.

C. TRIANAE STRIATA, *Linden.*—This variety is pale rose in the sepals and petals, having a broad median band of deep rose, lip clear rose, throat yellow.

FIG.—*Lindenia*, v. t. 232.

C. TRIANAE VANNERIANA, *Rehb. f.*—"A very fine *Cattleya Trianae*, of good colour (light rose); lateral lobes of the lip light rose, disk and anterior two-shanked process orange, top of lip fine purple; each lateral sepal bears from the base to near the top a broad orange-coloured stripe, and this is the characteristic mark. It was kindly sent by and is inscribed to my excellent correspondent, W. Vanner, Esq., Camden Wood, Chislehurst."—(Professor Reichenbach in *Gardeners' Chronicle*, 1886, n.s. xxv. p. 331).

C. TRIANAE WILLIAMSII, *Moore.*—One of the most distinct forms of this grand *Cattleya*. A very free-flowering and vigorous-growing kind; sepals and petals bluish white, very broad and of good substance, the petals distinctly veined with rosy magenta, especially towards the centre; lip nicely fringed, of an intense crimson-purple. This colour commences from the edge of the lip,

and is carried far back into the throat, as well as on to that part of the lip which encloses the column; in the throat is a slight blotch of yellow about an eighth of an inch wide. The leaves of this variety are often tinted with bronze colour.

C. VEITCHIANA, *Hort.*—A garden variety, raised at Chelsea, produced between *C. crispata* and *C. labiata*. The petals are of a pale pink, the sepals being a richer and brighter shade of the same colour; lip deep rich crimson-purple with yellow centre. It blooms during the spring months.—*Garden hybrid*.

C. VELUTINA, *Rehb. f.*—This is a plant of very distinct character. It was first flowered by J. Broome, Esq., of Didsbury, Manchester. The plant resembles *C. bicolor* in growth; the sepals and petals are pale orange, spotted and streaked with purple; the lip orange at the base, white with violet veins in front, where the surface is velvety. The flowers are very fragrant, which is an additional recommendation.—*Brazil*.

FIG.—*Orchid Album*, i. t. 26; *Gard. Chron.*, 1872, p. 1259, figs. 288—9; *Gartenflora*, 1888, t. 1265 (var. *Lietzei*).



CATTLEYA VELUTINA.
(From the *Gardeners' Chronicle*.)

C. VERIFLORA, *Hort.*—This splendid hybrid was exhibited by Sir Trevor Lawrence, Bart., in March, 1877, at the Royal Horticultural Gardens, South Kensington. Its origin is not known, but it seems to be between *C. labiata* and *C. Trianae*, and was bought as a seedling at Stevens' Auction Rooms. The stems are short and thick, about six inches long, of a light green colour; the leaves are about eight inches in length, and of the same colour; the sepals and petals are rosy violet; the lip deep magenta, margined with rose, with the throat orange. This variety is a good addition to the winter-flowering section of the genus.—*Garden hybrid*.

C. VIRGINALIS.—See CATTLEYA ELDERADO VIRGINALIS.

C. WAGENERI, *Rehb. f.*—A splendid free-flowering *Cattleya*, being a white-flowered form of the *Mossiae* section, and with flowers equal to those of that species in size. The sepals and petals are white; the lip also white, with a rich yellow patch in the centre. A fine plant for exhibition, producing blossoms in June and July, and lasting about three weeks in perfection. A very rare plant.—*La Guayra*.

FIG.—*Xenia Orch.*, i. t. 13; *Orchid Album*, vii. t. 295 *L'Orchidophile*, 1887, p. 15.
SYN.—*C. Mossiae alba*.

C. WALKERIANA, *Gardner*.—A truly elegant dwarf species, with bulb-like stems about four inches high, bearing an oblong-elliptic obtuse leathery leaf, and large rose-coloured flowers; the lip is of a richer rose than the other parts, and has a slight tinge of yellow. There are generally two flowers produced on a spike, each measuring five inches across, the flowers being produced during the winter on distinct slender stems, which are either leafless or bear only rudimentary leaves; the blossoms last four or five weeks in beauty, which is longer than in the case of any other *Cattleya*, besides which they are sweet-scented, and will fill the house with their perfume. We always grow this plant suspended from the roof, in a place where there is plenty of light, but not too much sun, on a block of wood, surrounded by a little sphagnum moss.—*Brazil*.

FIG.—*Bot. Reg.*, 1847, t. 42; *Parton, Mag. Bot.*, xv. p. 49, with tab.; *Part. Fl. Gard.*, i. t. 3; *Pescatorea*, t. 41; *Orchid Album*, iv. t. 154; *Gard. Chron.*, n.s., xiii. p. 780, figs. 132, 133; *Revue Hort. Belge*, 1888, p. 129; *L'Orchidophile*, 1889, p. 241; *Veitch's Man. Orch. Pl.*, ii. p. 49; *Gartenflora*, 1889, t. 1299.

SYN.—*Cattleya bulbosa*.

C. WALLISII.—See CATTLEYA ELDERADO VIRGINALIS.

C. WARNERI, *Moore*.—One of the finest of all *Cattleyas*, and belonging to the *labiata* section, resembling that species in its manner of growth, and producing blossoms equal to it in size. It is a very useful species for summer exhibitions. The flowers are large, more than 6 inches across, the sepals and petals of a beautiful rose, the lip large, of a rich crimson, and finely fringed. This rare plant was first flowered many years ago in the rich collection of R. Warner, Esq., and we thought it the finest and most magnificent *Cattleya* that had ever come under our notice; there are, however, many fine varieties of this type. The true and original form is that figured in Mr. Warner's handsome work on Orchids.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 8; *Floral Mag.*, t. 516; *Gard. Chron.*, n.s., xx., p. 372, fig. 57; *Reichenbuckia*, ii. t. 95 (*C. labiata Warneri*); *Revue Hort. Belge*, 1888, p. 177.

SYN.—*C. labiata Warneri*.

C. WAROQUEANA.—See C. LABIATA.

C. WARSCEWICZII, *Rehb. f.*—A magnificent species which grows about a foot high, and has light green foliage, in the way of *C. Trianae*. The flowers are large; sepals and petals purplish white; lip rich crimson. Of this there are also many varieties; it blossoms during the winter months, and continues three or four weeks in perfection.—*New Grenada*.

FIG.—*Xenia Orch.*, i. t. 31.

C. WARSCEWICZII DELICATA, *Moore*.—A magnificent variety in the way of *C. Trianae*, but still very distinct. It grows about a foot high, and bears blossoms six inches across; sepals and petals white; lip large, with a beautiful yellow centre and tinge of rose, white on the outside; it blooms in December and January, and is very useful during winter, continuing in perfection three or four weeks. This appears to be the same as the plant figured by Mr. Moore in 1861, in the *Floral Magazine*, under the name of *Cattleya Rollissoni*.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 4; *Floral Mag.*, t. 8.

SYN.—*C. Rollissoni*.

C. WARSCEWICZII DELICATA SUPERBA, *Hort.*—This grand variety was bloomed by Mr. W. Moore, when gardener to the Earl of Shrewsbury, at Alton Towers. It is by far the finest of its class we have ever seen; the lip is very large and finely expanded, and the sepals and petals are broad and pure white.—*Brazil*.

C. WHITEI, *Hort. Low: Rehb. f.*—This new *Cattleya* was found on a tree together with *C. labiata* and *C. Schilleriana*, so that it is possibly a hybrid between these two plants. Mr. W. Davis, gardener to H. Gaskell, Esq., of Woolton, Liverpool, says: "In growth it resembles *C. labiata*, and it has the double sheath generally seen in the true autumn-flowering variety. It has made a much stronger growth this year (1884), the bulb being about 6 inches high and the leaf about 5 inches long, and I have no doubt that as the plant gets stronger it will make a much larger bulb." Professor Reichenbach observes that the dried flower reminds one of *Cattleya labiata*. The sepals are of a deep rosy tint with a flush of olive green more evident on the outer side and at the tips; the petals are much broader and undulated, and of a deeper and brighter tint of rich rosy-magenta; and the lip has the two angular side lobes pale blush towards the base, the reflexed borders and apex of a refined purplish-rose colour; the throat is of the finest orange colour with purple lines running down the tube; the anterior broad roundish reniform lobe is prettily undulated and denticulate, and of a rich magenta-rose, veined closely on the extreme edge, which is pale rose, with deep crimson-magenta veins, these extending backwards in a wedge-shaped form to just within the orange throat. We received a three-flowered inflorescence from H. Gaskell, Esq., in July, 1883. It is deliciously sweet-scented, and is decidedly one of the most beautiful and distinct of the high-coloured *Cattleyas* that has come under our notice.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 115.

C. ZENOBIA, *Rolfe*.—A hybrid between *C. Loddigesii* and *Laelia elegans Turnerii*, obtained by Mr. Seden. The sepals and petals are stated to be "light rosy-pink, as is also the outside of the lateral lobes of the lip, while the inside is paler, shading off into very light yellow in front. The front lobe is very heavily veined with crimson purple on a paler ground, and with a narrow margin of this lighter colour."—*Garden hybrid*.

CHYSIS, Lindley.

(Tribe Epilendraceae, subtribe Bletieae.)

This is a beautiful genus, containing some six or eight reputed species. They are deciduous epiphytes, losing the leaves during their season of rest. The stems are thick, fleshy, and fusiform, about a foot long, producing their showy flowers in lateral racemes, with the young growth. The flowers are showy, with the parts spreading, the lip having large erect side lobes, and a reflexed middle lobe. The species inhabit Mexico and the United States of Colombia.



CHYSIS
(From Messrs. J. V



HELSONI.
h & Sons' Catalogue.)

Culture.—These plants will do on blocks of wood, but they grow much finer in baskets or pots, with peat, moss, and potsherds. All the species require a liberal supply of heat and moisture in their growing season, except *C. aurea*, which we have found to succeed best in the cool-house; but after they have finished their growth, they should be removed into a cooler house until they begin to grow again, and then be taken back to the coolest end of the East Indian house. During their season of rest they require very little water. They are propagated by dividing the plants just as they begin to grow.

C. AUREA, *Lindley*.—A charming Orchid, producing its flowers on a short spike, generally twice a year. The stems are pendulous sub-clavate, clothed with fuscous scales, the leaves ovate-lanceolate, nervose, undulate, and the blossoms, which grow in drooping racemes, are yellow, the lip being marked with crimson. It flowers at different times of the year, and lasts about a fortnight in beauty.—*Venezuela*.

FIG.—*Bot. Reg.*, t. 1937; *Bot. Mag.*, t. 3617; *Hooker's First Century Orch. Pl.*, t. 73; *Lindenia*, vi. t. 260.

C. BRACTESCENS, *Lindley*.—A fine species, with fusiform fleshy stems, ovate lanceolate plicate leaves, and nodding racemes of waxy flowers, sometimes six together, each flower measuring 2 or 3 inches across, and having white sepals and petals, while the lip is yellow inside and white outside, its emarginate plicate front lobe being marked with crimson lines, and its disk bearing five or seven fleshy lamellae between the erect side lobes. It blooms in April and May; lasts two or three weeks in perfection, and makes a good show plant.—*Mexico*.

FIG.—*Bot. Reg.*, 1841, t. 23; *Flore des Serres*, t. 675; *Bot. Mag.*, t. 5186; *Batem. 2nd Cent. Orch. Pl.*, t. 138; *Rev. Hort.*, 1859, p. 294; *Reichenbachia*, i. t. 18; *Orchid Album*, x. t. 446; *Lindenia*, viii. t. 383.

C. CHELSONI, *Rchb. f.*—A very fine hybrid raised from *C. Limminghei* probably crossed with *C. laevis*, which it very much resembles. The flowers are in bold drooping racemes, the sepals and petals nankin-yellow with a blotch of purplish-brown in the upper half, and the lip whitish with the numerous violet-purplish blotches of *C. Limminghei*; the column is whitish, with many small purplish dots. This form was raised in Messrs. Veitch's Royal Exotic Nursery, Chelsea.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2 ser., t. 97 (yellow lip); *L'Orchidophile*, 1883, p. 479; *Veitch's Man. Orch. Pl.*, vi. p. 27.

C. LAEVIS, *Lindley*.—A beautiful species, in which the fusiform pendent stems are fifteen inches long, producing from the young growths in June pendulous racemes, each bearing eight or more flowers; the sepals and petals are yellow in the lower, and orange in the upper part, and the lip is yellow spotted and blotched with crimson, the side lobes falcate, and the middle lobe

roundish and frilled, with a crest of five fleshy lamellae on the disk. It will last about a fortnight in good condition, and is the finest of all the species of *Chysis*.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guatem.*, t. 31; *L'Illust. Hort.*, t. 365; *Warner, Sel. Orch. Pl.*, ii. t. 14; *Orchid Album*, xi. t. 482.

C. LIMMINGHEI, *Rchb. f. et Linden*.—A charming species with fusiform stems, which grow a foot high, broadly lanceolate nervose leaves, and drooping racemes of delicate flowers, which are white heavily tipped with pale purplish-rose, and are produced very freely along with the young growth in May and June, continuing in perfection for about three weeks. The lip has the tall oblique side lobes yellowish externally, and yellow striped with red inside, and the roundish-oblong front lobe pale purplish-rose blotched and striped with deep purple, while the disk bears five lamellae digitately disposed. This makes a good exhibition plant, but requires a cool-house to keep it back for late flowering.—*Central America*.

FIG.—*L'Illust. Hort.*, t. 240; *Bot. Mag.*, t. 5265; *Warner, Sel. Orch. Pl.*, i. t. 34.

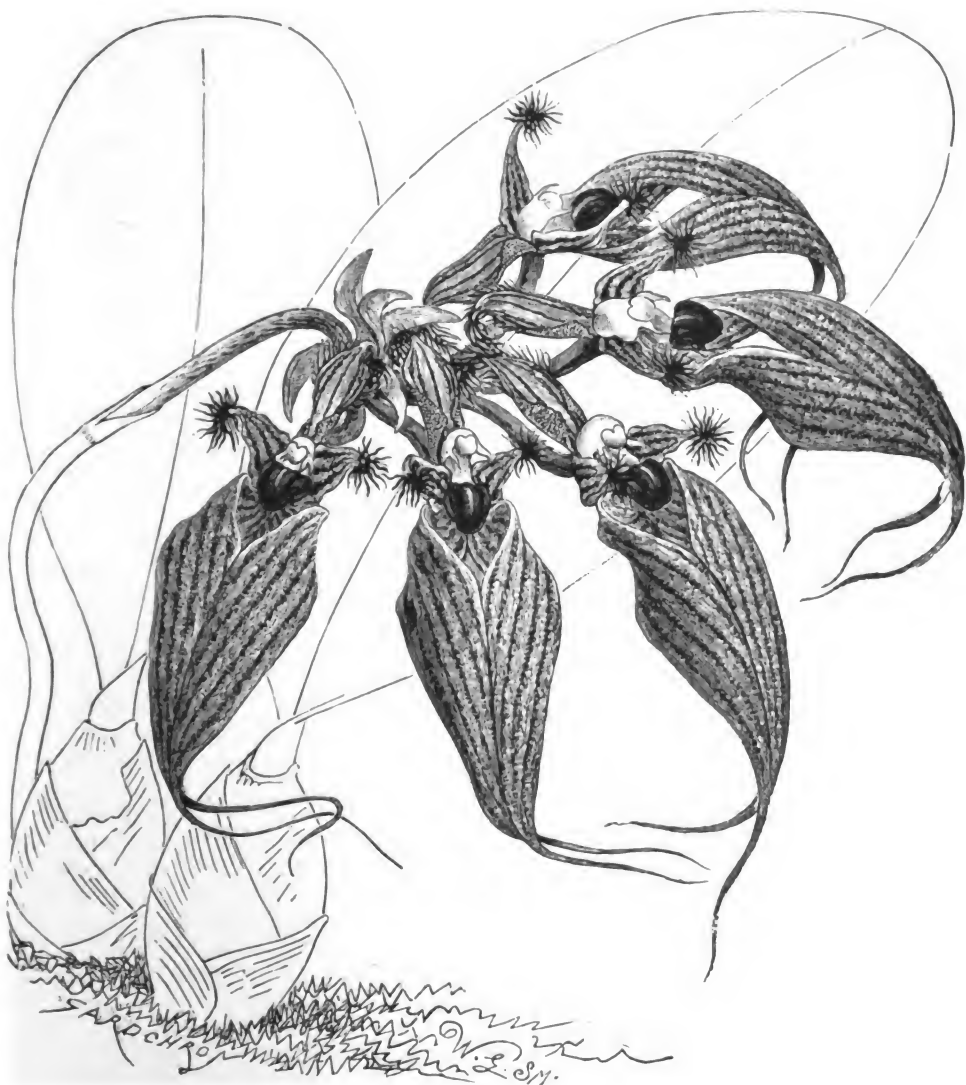
C. UNDULATA, *Hort*.—An exceedingly rare and handsome species, of which the pseudobulbs are some 18 inches in height. The racemes consist of from ten to twelve flowers, which have the sepals and petals of a lively orange-yellow, and the lip cream coloured with numerous lines of pink.—*Native country not known*.

CIRRHOPETALUM, *Lindley*.

(Tribe Epidendreae, subtribe Dendrobieae.)

Small-growing epiphytes, with creeping rhizomes bearing one-leaved pseudobulbs in axils of scariosse sheaths. The scapes are leafless, produced at the side of the pseudobulbs, and bear at the top a raceme of flowers which is contracted into an umbel. They are widely scattered, being found in India, China, the Malay Archipelago, Australia, and the Mascarene Islands. About thirty species are known. Reichenbach refers them all to *Bulbophyllum*.

Culture.—The plants forming this genus are peculiar in the construction of their flowers, and a few kinds ought to be in every collection. They are small compact evergreen plants, and will do either in pots or on blocks of wood with moss. If grown in pots, fibrous peat and sphagnum, with good drainage and a liberal supply of water in the growing season, are necessary for their well-being; but a very little moisture will suffice when they are at rest. They require the heat of the East Indian house, and to be kept as near the light as possible.



CIRRHOPETALUM ORNATISSIMUM.

(From the *Gardeners' Chronicle*.)

C. AMESIANUM, Rolfe.—A charming species, dedicated to the late Hon. F. L. Ames, of North Easton, Mass., U.S.A., a distinguished and enthusiastic lover of Orchids. The nodding spikes carry umbels of from 6 to 10 flowers each. The lateral sepals, which are united, are of a bright purple rose, with the base and sides creamy white. Dorsal sepals and petals rich yellow, and adorned with a red-brown fringe; lip, red brown.—*Malay Archipelago*.

FIG.—*Lindenia*, vii. t. 314.

C. CUMINGII, Lindley.—A curious Orchid, introduced by Mr. Cuming many years ago, and still a scarce plant. It has small tetragonal pseudobulbs, oblong-obtuse leaves, and numerous dimidiate umbellate flowers on wiry scapes, the blossoms arranged in a circle; the lateral sepals, which are much enlarged, are of a bright ruby colour, the dorsal sepal and petals are beautifully fringed, and the lip has an oscillatory motion when touched. It is easily grown, and should find a place in every collection.—*Philippine Islands*.

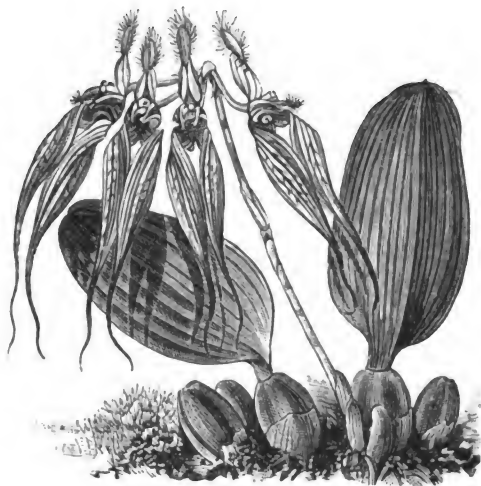
FIG.—*Bot. Mag.*, t. 4996; *Journ. of Hort.*, 1889, xviii. p. 128, f. 20.

C. MASTERSIANUM, Rolfe.—This handsome species was named in honour of Dr. M. T. Masters, F.R.S., the able editor of the *Gardeners' Chronicle*. The umbels bear about seven flowers of a rich dark yellow. The united lateral sepals are veined at the base with rich brown-red, while the lip is deep purple-brown.—*Malay Archipelago*.

FIG.—*Lindenia*, vi. t. 255.

C. MEDUSAE, Lindley.—Amongst the strange and varied forms which the flowers of Orchids present, this species has one of the most remarkable. It is a dwarf-growing plant, the pseudobulbs ovate, tetragonal, the thick fleshy leaves oblong, and the flowers, though not large, capitate and very numerous; the sepals are dull pale yellow spotted with pink, and drawn out into long drooping threads at the apex, so that the inflorescence looks like a head with long hair hanging down, from whence its name has been derived. It should find a place in every collection for its perfectly unique appearance.—*Singapore*.

FIG.—*Bot. Reg.*, 1842, t. 12; *Vriese Illust. Orch.*, t. 12; *Bot. Mag.*, t. 4977; *Belg. Hort.*, viii. t. 12; *Moore, Ill. Orch. Pl.*, *Cirrhopetalum*, t. i.; *Batcm. 2nd Cent. Orch. Pl.*, t. 148.



CIRRHOPETALUM ORNATISSIMUM.

C. ORNATISSIMUM, Rehb. f.—A pretty dwarf species, with pseudobulbs 1 inch high, and dark green leaves about 5 inches long and 2 inches broad. The flower-

spike is produced from the base of the bulbs measuring about 7 inches in length, bearing an umbel of pale purplish-brown flowers, which are also striped and netted with purple. The dorsal sepal is furnished with a series of blackish purple hairs around the edge, and the tips of the petals are also similarly ornamented. Flowers in October.—*India, Himalayas.*

FIG.—*Orchid Album*, viii. t. 369; *Bot. Mag.*, t. 7229; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 553, f. 91.

C. PAHUDII, *Vriese*.—This is another very curious and interesting plant. The habit is dwarf, the leaves dark green, the flowers arranged in an umbel, large, reddish-brown, with bright red dots; the sepals and petals are turned back, giving it a most singular appearance. It should be grown on a block of wood in the East Indian house.—*Java.*

FIG.—*Vriese, Illust. Orch.*, tt. 3, 11.

C. PULCHRUM, *N. E. Brown*.—This pretty species has the united lateral sepals of a pale straw yellow, thickly blotched with dull rose. The dorsal sepal is hood-shaped with the apex prolonged into a thread-like tail; in colour it is rosy purple, covered on the inside with minute darker spots. The petals and lip are deep rosy-purple.—*Halmahera, Malay Archipelago.*

FIG.—*Lindenia*, iv. t. 165; *L'Ill. Hort.*, xxxiii. t. 608.

CLEISOSTOMA, *Blume*.

(Tribe Vandeae, subtribe Sarcantheeae.)

A genus of epiphytal plants, with leafy stems, clothed with distichous spreading leathery leaves, usually flat, but sometimes terete, and lateral peduncles bearing simple or branched racemes, the flowers for the most part small, and therefore such as are not much esteemed by the majority of Orchid fanciers, but nevertheless there are some of the species which would form ornaments in our collections. Some fifteen species are described—Indian, Malayan, or Australian.

Culture.—They require the same treatment as *Acriides*.

C. CRASSIFOLIUM, *Lindley*.—This distinct plant has close-set thick leathery much recurved leaves, resembling those of a *Vanda*; it produces its nodding panicles of sea-green, rosy lipped flowers from the axils of the leaves; and although the individual flowers are small it is a charming plant.—*Burma*.

FIG.—*Part. Fl., Gard.*, iii. t. 29; *Lem. Jard. Fl.*, t. 397; *Lindenia*, iii. t. 139.

C. DAWSONIANUM, *Rehb. f.*—In general appearance this resembles a *Renanthera*. The leaves are arranged in a distichous manner, are light green in colour, and about 6 inches long; and the flowers, which are thick and fleshy, are borne in branched racemes some twenty or more together. The sepals and petals are light yellow, banded with brown, the lip deeper yellow, blotched and streaked with brown.—*Moulmein.*

COCHLIODA, Lindley.

(Tribe Vandaceae, subtribe Oncidieae.)

Some of the plants here included appeared in the previous editions of this work under the name of *Mesospinidium* of Reichenbach, but *Cochlioda* was established by Lindley many years previous upon a Peruvian plant which has not yet been introduced to our collections in a living state, and the plants here included appear to accord with that, so that there is nothing to prevent us accepting this as the generic name for them, for they are singularly alike. Lindley says: "The habit is that of *Odontoglossum*; the lip and column would refer it to *Epidendrum*; the pollen masses and caudicle are such as we find in no neighbouring genus; the calli on the lip placed just in front of the anther are narrow, raised, and fleshy, and each is furnished at the point with a bivalve gland which opens vertically." The species are natives of the Peruvian Andes.

Culture.—The plants of this genus are evergreens, requiring cool treatment, and are best grown in baskets suspended from the roof, as they produce drooping spikes of flower from the sides of the pseudobulbs. They should be placed in a compost of peat and moss, giving them a liberal supply of water during the growing season. They are propagated by dividing the pseudobulbs.

C. NOEZLIANA, Rolfe.—A handsome and distinct novelty introduced independently by the Horticulture Internationale and Messrs. Charlesworth, Shuttleworth & Co. The pseudobulbs are compressed, ovate-oblong; leaves lineate, acute; scape arcuate, many-flowered; sepals oblong-lineate, petals ovate, both of a rich orange-scarlet; the lip trifold, same colour as the sepals and petals with a golden-yellow disk; column violet-purple, which colour produces a striking contrast with the remainder of the flower. Named in honour of M. Jean Noezli.—*South America: Peru (?)*.

FIG.—*L'Orchophile*, 1892, p. 272 (plate); *Lindenia*, vi. t. 266; *Revue Hort. Belge*, 1892, p. 49, t. 5.

C. ROSEA, Benth.—This very pretty little species is when well grown a charming plant. It is closely allied to *C. vulcanica*, but its flowers are not so brilliant in colour as those of that plant. Its pseudobulbs are ovate, two-edged, dark-green tinted with violet, the leaves ligulate oblong bluntish, and the flowers are produced in drooping racemes, each flower about an inch across, rosy-carmine with the tip of the column white; the sepals and petals are oblong-elliptic, the lip cuneate at the base, three-lobed, the lateral lobes small enclosing the disk, which bears a four-lobed callus, the middle lobe longer, linear, dilated at the end. It flowers during the winter months, producing from 12 to 20

flowers on each raceme, and it remains in beauty for a considerable time. The cool house suits it best.—*Peru*.

FIG.—*Bot. Mag.*, t. 6084; *L'ill. Hort.*, 3rd ser., t. 66; *Batem. Mon. Odont.*, t. 22.

SYN.—*Mesospinidium roseum*; *Odontoglossum roseum*.

C. SANGUINEA, *Benth. et Hook.*—This very pretty plant in habit resembles the smaller *Odontoglossums*. The pseudobulbs are oval compressed, clouded with prettily mottled bands of brown, bearing two cuneate ligulate leaves. The flowers come in slender drooping slightly branched racemes, which spring from the base of the bulbs, and bear numerous flowers of a beautiful waxy appearance, bright rose in colour, and are produced in summer and autumn, lasting several weeks in perfection.—*Peru*; *Ecuador*.

FIG.—*Bot. Mag.*, t. 5627; *Batem. Second Cent. Orch. Pl.*, t. 196.

SYN.—*Mesospinidium sanguineum*.



COCHLIODA SANGUINEA

C. VULCANICA, *Benth. et Hook.*—A very pretty species, differing from *C. sanguinea* in having erect instead of drooping flower spikes. The pseudobulbs are ovoid, compressed, and more or less two-edged, with oblong keeled bluntish leaves 3 to 5 inches long, and unilateral racemes of flowers on a slender erect peduncle, the flowers about 2 inches across, of a dark bright rose colour, from 12 to 20 on a spike, and producing a charming effect, since they remain in full beauty for a considerable time; the lip, which is three-lobed, the side lobes roundish and the middle one emarginate, is in the front part of the same bright rose as the sepals and petals, but becomes paler on the disk, where there is a four-keeled callus. A variety has been recently introduced called *grandiflora*, which has larger flowers and a greater number of them on the spikes.—*Eastern Peru*.

FIG.—*Bot. Mag.*, t. 6001; *Orchid Album*, vii. t. 317; *Lindenia*, iv. t. 154; *Revue Hort. Belge*, 1888, p. 225 (plate).

SYN.—*Mesospinidium vulcanicum*.

COELIA, *Lindley*.

(Tribe Epidendraceae, subtribe Ericace.)

A small genus of epiphytes, the bases of whose stems eventually thicken into pseudobulbs. They have narrow elongate plicately venose leaves, and from the base of the bulbs dense racemes of moderate-sized flowers on short erect scapes ascend above the foliage. The four or five known species are natives of the West Indies, Central America, and Mexico.

Culture.—These plants do best in pots, in a compost of peat and moss, with a little charcoal added, and should be grown in the *Cattleya* house.

C. BELLA, *Rehb. f.*—A very pretty species, furnished with roundish-ovate compressed pseudobulbs, three or four ensiform nervose leaves, and short upright radical scapes bearing from four to seven funnel-shaped fragrant fleshy flowers, of which the sepals and petals are creamy white, broadly tipped with rich magenta, and the lip is yellow, with a rather prominent front lobe. It flowers during the autumn months.—*Guatemala*.

FIG.—*Lem. Jard. Fl.*, iii. t. 325 ; *Orchid Album*, ii. t. 51 ; *Bot. Mag.*, t. 6628.

SYN.—*Bifrenaria bella* ; *Bothriochilus bellus*.



COELIA BELLA.

C. MACROSTACHYA, *Lindley*.—An erect-growing distinct species, with rather large and nearly globose pale green glabrous pseudobulbs, which are invested at the base with coarse brown scaly envelopes, and bear at the top about three large lanceolate membranous plicate leaves a foot or more in length, sheathing at the base. From the base of the pseudobulbs arises the flower scape, which is about a span high, clothed with large ovate involute brownish scales, and surmounted by a cylindrical raceme, nine or ten inches long, crowded with rather small bright rosy-red flowers in the axils of long narrow brownish bracts. The concave fleshy sepals are oblong acute, corrugated externally, deep rosy-red, the oblong-ovate petals, as long as the sepals, are blush-white, and the reflexed oblong-acute lip is white, continued below into a two-lobed blunt spur. It blooms in August, and with its long cylindrical flower spikes is very effective.—*Mexico*.

FIG.—*Bot. Mag.*, t. 4712.

**COELOGYNE, Lindley.**

(Tribe Epidendreae, subtribe Coelogynae.)

There are numerous species of *Coelogyne*, many of them very beautiful, the colour of the flowers being of a most delicate hue, and often richly marked; whilst other kinds are inconspicuous and not worth growing. They are pseudobulbous and evergreen plants, the bulbs from 1 to 6 inches high, two-leaved, the flowers being generally produced with the young growth, and the leaves being perfected when the flowering is over. The lip is sessile, the base concave, and folded over the elongated apodous column. The flowers of some are very large, measuring as much as three inches across. Some of our botanists include in this genus the group *Pleione*, which we have kept distinct. About fifty species are known, inhabiting India, the Malayan Archipelago, and Southern China.

Culture.—These plants, with the exception of *C. Mussangeana* and *C. Dayana*, which do best in baskets on account of the drooping character of their spikes, are best grown in pots, with peat and moss. Some of them will do on blocks, but pot or basket culture is to be preferred. They require good drainage, and an abundance of water at their roots in their growing season. Some are best grown in the East Indian house, others will do in the cool-house, and others, with the *Cattleyas*, but after these have finished their growth a cooler house will do for them. During their period of rest they should have but little water. They are propagated by dividing the pseudobulbs.

C. ASPERATA, Lindley.—A fine evergreen species, attaining rather a large size. It has tall oblong attenuate pseudobulbs, with a pair of stalked lanceolate leaves, growing about two feet high. The large flowers are produced on a drooping raceme about a foot long, twelve or more of them together, and are of a pale creamy yellow, the lip richly marked with brownish yellow veins springing from a rugged bright orange central ridge; they are fully 3 inches in diameter, and are produced in June or July, lasting two weeks in good condition. This should be grown in the *Cattleya* house, and requires a large pot to grow it in perfection, being one of the freest of all the *Coelogynes*.—*Borneo*.

FIG.—*Pescatorea*, t. 7; *Purton Mag. Bot.*, xvi. p. 225, with tab. (bad); *Orchid Album*, vii. t. 311.

SYN.—*C. Lowii*.

C. ASSAMICA, *Linden et Rehb. f.*—This species was imported in 1857 by M. Linden, and is allied to *C. fuscescens*; flowers ochre-yellow, sepals lanceolate, petals linear-acute, ochre-yellow, side lobes of lip with chestnut brown edges and spots.—*Assam*.

FIG.—*Xenia Orch.*, ii. t. 134. f. 2.

C. BARBATA, *Griffith*.—This is a most useful winter-flowering species, and according to Dr. Lindley the finest of the genus. The pseudobulbs are roundish-ovate, light green, with leaves of a thick leathery texture and oblong-lanceolate form, produced two from each bulb. The flower scapes are erect, producing a flexuose raceme of several flowers, which open in succession, the individual blossoms being from two to three inches across. The sepals and petals are pure white, the lip is also white, distinctly bearded round the margin with a fringe of pale sepia-coloured hairs, and of a darker sepia-brown in the centre, where they cover the veins, and form three shaggy crests. It flowers in January, and continues blooming for several weeks. This species thrives best in the cool-house, and requires an abundant supply of moisture.—*Northern India: Bhotan, Khasya*.

FIG.—*Griff. Not. Plant. Asiat.*, t. 291; *Orchid Album*, iii. t. 143; *Vitch's Man. Orch. Pl.*, vi. p. 32.

C. CILIATA, *Hort*.—A very pretty plant, well worthy of cultivation, for autumn blooming. It is a compact-growing species, making pseudobulbs about 4 inches high, with light green leaves, and producing in great profusion its white and yellow flowers, which have some brown markings.—*India*.

C. CORRUGATA, *Lindley*.—This is a very pretty species, and interesting as being one of the cool Orchids from the hilly districts of India, which will grow freely and bloom with *Odontoglossums*. It is a free-growing compact plant, with ovate wrinkled pseudobulbs bearing a pair of broad oblong leaves, and producing erect racemes of lovely pure white flowers of considerable size; the lip is yellow inside, striped with orange. It should be grown in a pot, with an abundance of drainage.—*India: Khasya, Neilgherries*.

FIG.—*Bot. Mag.*, t. 5601; *Batm. 2nd Cent. Orch. Pl.*, t. 188; *Wight, Icon.*, t. 1639.

C. CORYMBOSA, *Lindley*.—A very distinct and beautiful species, having large flowers 3 to 4 inches across, which are produced in an upright corymbose raceme which is thrown up with the young growth. The pseudobulbs are oblong, terete, the leaves oval, narrowed into a petiole, and the sepals and petals ligulate-lanceolate, creamy white, the lip being white, with two bright yellow ocellate spots or eyes surrounded by brown margins; the throat is also marked with yellow and brown. It flowers during June and July.—*India: Khasya hills, at 4,000 to 5,000 feet elevation*.

FIG.—*Gard. Chron.* 3rd ser., 1887. ii. p. 73, f. 15; *Bot. Mag.*, t. 6955.

C. CRISTATA, *Lindley*.—A magnificent Orchid, dwarf and of evergreen habit, with leaves about 6 inches long. The flowers, six or eight together, proceed from the base of the oblong angulate pseudobulbs in a drooping raceme, each flower being 3 or 4 inches across, with charmingly undulated lanceolate

sepals and petals; the colour pure white, with a prominent blotch of yellow on the crests of the lip. It blossoms in February and March, and will continue in perfection four or five weeks if the flowers are kept free from damp. This plant, which is largely grown for cut flowers, is the finest of the genus, and in fact one of the finest of all Orchids, and ought to be in every collection. We have seen on a specimen grown in the collection of J. Buchanan, Esq.,



COELOGYNE CRISTATA.

Edinburgh, as many as 600 flowers at one time; and on another, grown by Mr. Cross, at Melchet Court, seventy-five spikes are recorded as being produced, the specimen measuring 5 feet across. We find it makes its growth best in the cool-house, but after this is completed we place the plants in the *Cattleya* house, as if left in the cool the flower spikes are apt to damp and turn black. *Chatsworth* variety produces more flowers on the spike

than the normal form; they are also larger and are produced later in the season. *Trentham* variety is the latest flowering form, blooming several weeks after the others are over.—*North India*.

FIG.—*Bot. Reg.*, 1841, t. 57; *Pescatorea*, t. 25; *Gartenflora*, t. 245; *Warner Sel. Orch. Pl.*, i. t. 35; *Flora des Serres*, t. 1807; *Jennings, Orch.*, t. 7; *Paxt. Fl. Gard.*, iii. p. 171, fig. 312; *Gard. Chron.*, N.S., vii. p. 597, fig. 95 (specimen plant); *Id.*, 3rd ser., 1888, iii. p. 489, f. 68 (*Chatsworth* variety); *Moore, Ill. Orch. Pl.*, *Coelogyne*, t. 4; *L'Orchidophile*, 1888, p. 212; *Vitch's Man. Orch. Pl.*, vi. p. 34 and p. 35 (*Chatsworth* variety); *Journ. of Hort.*, 1888, xvi. p. 197, f. 25; *Revue Hort. Belge*, 1889, p. 85, t. 8.

✓ **C. CRISTATA ALBA**, *Moore*.—This fine novelty is in all respects similar to the type, except that instead of having the yellow blotch on the lip, its flowers are everywhere of a pure white. It blooms during winter and spring, and lasts from two to three weeks in perfection.—*India*.

FIG.—*Orchid Album*, ii. t. 54; *Lindenia*, iv. p. 173.

SYN.—*C. cristata hololeuca*.

C. CRISTATA CITRINA, *Williams*.—This is a very distinct variety, which invariably flowers some two or three weeks later than the type, which is a decided advantage, as it prolongs the flowering season, and it also differs in having the centre of the lip stained a delicate lemon-colour, and not deep yellow as in the ordinary form of the species. *Day's* variety is intermediate between

citrina and the type, the crest of the lip being intermediate in colour. Originated in the collection of the late John Day, Esq., of Tottenham.—*Nepaul*.

FIG.—*L'Orchidophile*, 1888, p. 212.

SYN.—*C. cristata Lemoniana*.

C. CRISTATA HOLOLEUCA.—See COELOGYNE CRISTATA ALPA.

C. CRISTATA LEMONIANA.—See COELOGYNE CRISTATA CITRINA.

C. CRISTATA MAJOR, Williams.—A very large-flowered, superior variety, with much broader and stouter sepals and petals, and with flowers altogether larger and superior to the type.—*India*.

FIG.—*The Garden*, 1887, xxxi. p. 190; *Reichenbachia*, i. t. 6.

SYN.—*C. cristata maxima*.

C. CRISTATA MAXIMA.—See COELOGYNE CRISTATA MAJOR.

C. CUMINGII, Lindley.—A pretty species with ovate pseudobulbs, a pair of lanceolate five-nerved leaves, and erect short racemes of handsome flowers, which are snow-white except in the middle of the lip, where they are yellowish, with the tips of the three crisped lamellae and of the two short scale-like crests orange-coloured. It lasts long in beauty.—*Singapore*.

FIG.—*Bot. Reg.*, 1841, t. 29; *Bot. Mag.*, t. 4645; *Lem. Jard. Fl.*, t. 337; *Flore des Serres*, t. 764; *Moore, Ill. Orch. Pl.*, *Coelogyne*, t. 3.

C. DAYANA, Rchb. f.—In this species the pseudobulbs are long, narrow, pyriform, with stalked oblong acuminate leaves. The long pendulous inflorescence bears nearly two dozen flowers, the sepals and petals are ligulate-acute, and the lip broad, three-lobed. The colour is a light ochre-yellow, with numerous dark brown collateral longitudinal broad stripes on the lateral lobes of the lip, and on the same light ochre ground a crescent-shaped half ring of dark brown, opening towards the base on the middle lobe; two plaited keels run from the base of the lip to the base of the mid-lobe, where they are divided into six similar keels, covered with the most lovely denticulated undulations. It flowers during the summer months.—*Borneo*.

FIG.—*Orchid Album*, vi. t. 247; *Gard. Chron.*, N.S. 1886, xxvi. p. 44, f. 9; *Vitch's Man. Orch. Pl.*, vi. p. 43.

C. ELATA, Lindley.—This is a very old species, introduced some fifty years ago, but it is nevertheless a real beauty. The flowers, which are of medium size and drooping, are borne in erect racemes, which spring with the sword-shaped striated leaves from the apex of the tall oblong angulate pseudobulbs, and have the sepals and petals narrowish pure white, and the lip white with a forked yellow band in the centre, and two longitudinal deep orange crisped crests on the disk. It is found at an altitude of 8,000 to 9,000 feet on the slopes of Tongoo, near Darjeeling. It flowers during April and May, and should be grown in the cool-house.—*North India*.

FIG.—*Bot. Mag.*, t. 5001; *Wall. Pl. Asiat. Rar.*, iii. t. 218.

C. FLACCIDA, *Lindl.*—This old species was discovered at Noakote in Nepaul, by Dr. Wallich, in the beginning of this century. It produces drooping racemes of flowers from eight to twelve in number. Petals linear-lanceolate white; lip ovate, three-lobed with three elevated flexuose lines, white having a bright yellow patch on the disc. Flowers in spring.—*Nepaul*.

FIG.—*Bot. Mag.*, t. 3318; *Bot. Reg.*, 1841, t. 31; *Hooker's First Century Orch. Pl.*, t. 2.

C. FÖRSTERMANNI, *Rehb. f.*—This plant, which appears to be an exceedingly shy flowerer, is described by the late Professor Reichenbach in the *Gardeners' Chronicle*, 1887, i. p. 798, as follows:—"I regard its growth as quite peculiar. The strong rhizome is as thick as a condor's quill, covered with sepia-brown sheaths. There are numerous descending roots. The old bulbs are cylindrato-fusiform, ribbed, usually curved, and marked by the scars of two leaves. Mr. Förstermann tells me he saw as many as forty flowers on one peduncle, and that the flowers are snow-white with some yellowish-brown on the disk of the lip. The flowers are equal in size to those of *C. Cumingii*. Sepals and petals lanceolate, sepals keeled outside. The cartilaginous ribbed leaves attain $1\frac{1}{2}$ feet in length, 3 inches and more in width, and have a very short petiole."—*Malay Archipelago* (?).

C. FUSCESCENS, *Lindley*.—A beautiful species, one of the finest of the genus. The pseudobulbs are elongate, terete, 3 to 4 inches long, the broad oblong plicate leaves in pairs, and the flowers in short, nodding, five- to eight-flowered racemes. The sepals and petals are brownish green, the dorsal sepal broadest, and the lip marked with four cinnamon spots, one on each of the small lateral lobes, and two at the base of the middle lobe, where there are also three elevated lines or crests. It flowers in autumn and winter, and lasts in bloom for a considerable time.—*North India; Burmah, Moulmein*.

C. FUSCESCENS BRUNNEA, *Lindley*.—Sepals and petals lanceolate acuminate, straw-yellow; sepals wider than the petals; lip three-lobed, lateral lobes speckled and margined internally with brown, mid-lobe nearly square, whitish at the edges passing into rich chestnut brown at the base.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5494; *Batcm. 2nd Cent. Orch. Pl.*, t. 104.

C. GARDNERIANA, *Lindley*.—A very distinct species, growing about a foot high, with flask-shaped dark green pseudobulbs, a pair of broadly lanceolate five-nerved leaves, and a long lateral or terminal drooping distichous raceme of peculiar long-petalled half-closed white flowers with a yellow lip, each having a broad brownish bract at its base. It blooms during the winter months, and lasts three or four weeks in good condition. It should be grown in the *Cattleya* house.—*India: Nepaul, Khasya, &c.*

FIG.—*Orchid Album*, iv. t. 153; *Parton, Mag. Bot.*, vi. p. 73, with tab. (poor); *Wall. Pl. Asiat. Har.*, i. t. 38.

C. GOWERI, *Rehb. f.*—This is a pretty and delicate species of considerable beauty. The pseudobulbs and leaves resemble those of *C. ocellata*; the racemes are pendulous, bearing several flowers, the sepals and petals are pure white, and the lip white, with a stain of pale yellow on the disk. It blooms during March and April.—*Assam*.

C. LACTEA, *Rchb. f.*—Pseudobulbs oblong, tapering, deeply furrowed, 3 to 4 inches long. Leaves in pairs, 6 to 8 inches long and about 2 inches wide, coriaceous, deep green. Raceme springing from the base of the bulbs, nodding, 6 to 12 flowered. Individual flowers nearly 2 inches across. Sepals broadly oblong acute, creamy-white. Petals much smaller, linear-oblong, same colour as sepals. Lip three-lobed, creamy-white tinged with yellow; side lobes veined with brown. Mid-lobe yellow at the base, pure white in front. This is a very free bloomer, but devoid of scent. Flowers in spring.—*Burmah.*

FIG.—*Orchid Album*, x. t. 459.

C. LENTIGINOSA, *Lindley*.—A distinct and desirable species, with bulbs about 3 inches long, four-angled; leaves oblong-lanceolate acute, in pairs. Raceme produced from the base of the pseudobulbs, 4 to 6 flowered, about $1\frac{1}{2}$ inch in diameter, sepals and petals linear-lanceolate acuminate, rich straw yellow. Lip three-lobed, side-lobes white, bordered with deep brown and spotted with a lighter brown. Mid-lobe, having a broad blotch of orange brown in the centre, margined with white.—*Burmah.*

FIG.—*Bot. Mag.*, t. 5958; *Orchid Album*, x. t. 442.

C. LOWII.—See COELOGYNE ASPERATA.

C. MASSANGEANA, *Rchb. f.*—This exceedingly handsome and remarkable evergreen species was first flowered by M. D. Massange, Château de Baillonville, Marche, Belgium, in honour of whom it has been named. It is both vigorous in growth and free-flowering, producing its blossoms twice a year, and continuing several weeks in perfection. The pseudobulbs are pear-shaped, 3 to 4 inches in height, two-leaved; and the drooping flower scapes, which are produced from the base of the bulbs, are generally from $1\frac{1}{2}$ to 2 feet long and bear two dozen or more flowers; the sepals and petals are light ochre-yellow, and the lip of a beautiful maroon-brown with bright yellow veins, the middle lobe creamy-white at the edge, with a large brown disk, and having three light yellow keels extending from the base to the tip. This plant is best grown in a basket suspended from the roof of the *Cattleya* house; and when treated in this way the long drooping spikes have a charming effect.—*Assam.*

FIG.—*Orchid Album*, i. t. 29; *Floral Mag.*, 2 ser., t. 373; *Gard. Chron.*, N.S., xvii. p. 369, with fig.; *Bot. Mag.*, t. 6979; *Vitch's Man. Orch. Pl.*, vi. p. 43.

C. MEDIA, *Hort.*—A pretty small-growing species, with short round bulbs, leaves 7 inches long, and flowers produced on spikes 10 inches high; the sepals and petals are creamy white, the lip yellow and brown. It blooms during winter, and lasts in perfection three or four weeks. The plant grows well on a block, or in a pot in fibrous peat.—? *India.*

C. OCELLATA, *Lindley*.—A very pretty and desirable species, suitable either for pot or basket culture. The pseudobulbs are ovate and sub-angulate, furnished with a pair of lanceolate leaves. The flowers, which are produced in drooping racemes from the apex of the bulbs, are pure white with the exception of the lip, which has on each lateral lobe a large ocellated yellow spot, margined

with a narrow orange border, three smaller ocellated spots occurring on the disk; the throat is striped with purplish brown. It flowers in February and March.—*North India*.

FIG.—*Bot. Mag.*, t. 3769 (starved).

C. OCELLATA MAXIMA, *Rehb. f.*—This variety is, according to the late Prof. Reichenbach, "a great beauty, and is far stronger than the common plant." We can fully endorse this opinion, having distributed the plant, and flowered it on several occasions. Its blossoms are produced on drooping racemes, which sometimes contain as many as eight flowers. The colour is the same as in *C. ocellata*, but the lateral blotches on the lip are spread widely apart, and the flowers are larger. The bulbs are much larger than those of *C. ocellata*, being 2 or 3 inches high, and about 3 inches in circumference. It is very sweet-scented, a single plant perfuming a whole house. It flowers during March and April, and lasts a long time in beauty.—*India*.

FIG.—*Floral Mag.*, 2 ser., t. 365; *Lindenia*, vi. t. 243; *Journ. of Hort.*, 1887, xiv. p. 273, f. 49; *Veitch's Man. Orch. Pl.*, vi. p. 45.

C. OCHRACEA, *Lindley*.—A very old species, having pure white very sweet-scented flowers. The pseudobulbs are small, oblong, with two or three lanceolate leaves, and the flowers grow in erect racemes of about seven or eight together. The lip has two horse-shoe shaped blotches on its disk, which are bright ochraceous-yellow bordered with orange. It may be grown either in a pot or a basket.—*North-East India*.

FIG.—*Bot. Reg.*, 1846, t. 69; *Bot. Mag.*, t. 4661; *Batcm. 2nd Cent. Orch. Pl.*, t. 145; *Jem. Jard. Fl.*, t. 342; *Moore, Ill. Orch. Pl.*, Coelogyne, t. 2.

C. ODORATISSIMA, *Lindley*.—An elegant dwarf cool-house Orchid, growing only about 8 or 10 inches high, and producing abundance of its white and delicately honey-scented blooms in winter—a season when white flowers are so desirable. It has ovate wrinkled pseudobulbs an inch long, usually two linear-lanceolate leaves, and filiform peduncles arising from the apex of the bulbs, and bearing about three of its pure white flowers.—*South India and Ceylon*.

FIG.—*Bot. Mag.*, t. 5462; *Wight, Icon. Pl. Ind. Or.*, tt. 1640, 1641; ? *Xenia Orch.*, ii. t. 155 (*C. triida*).

C. PANDURATA, *Lindley*.—A curious and very striking Orchid, which when in bloom is one of the most interesting species we know. It grows 18 inches high, and has oblong-ovate compressed shining pseudobulbs, from the base of which the long drooping flower spikes proceed. The individual flowers are large, with pale green sepals and petals, and a singularly warted greenish yellow lip marked with broad black veins, ending in a broad triangular black blotch towards the front, while on the disk are two deep double-warted crests, which converge towards the middle and lose themselves in a patch of rugged two-lobed warts.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5084; *Batcm. 2nd. Cent. Orch. Pl.*, t. 160; *Flore des Serres*, t. 2139; *Xenia Orch.*, ii. t. 121; *Orchid Album*, ii. t. 63; *Lindenia*, ii. t. 86; *Journ. of Hort.*, 1890, xx. p. 425, f. 62; *Reichenbachia*, 2nd ser., ii. t. 58; *Veitch's Man. Orch. Pl.*, vi. p. 47.

C. PARISHII, *Hooker*.—The flowers of this species at first sight resemble those of a miniature *C. pandurata*, being much smaller in all their parts. The cylindraceo-tetragonal pseudobulbs are four to five inches in length and half an inch in diameter; they are surmounted by two broad ovate-oblong nervose leaves, and the six-flowered raceme is terminal on the pseudobulbs. The flowers are yellowish-green, the three-lobed pandurate lip green with a few black spots, and the dilated roundish front lobe undulately crisped; the disk bears three elevated lines, and there are some elegant fringes on the front part of the lip. It blooms during April and May.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5323.

C. PELTASTES, *Rchb. f.*—The flowers of this species resemble those of *C. pandurata* except in the lip, which in the present species is of a creamy-white, with yellowish-brown markings and veins. The pseudobulbs are very peculiar, being somewhat crescent-shaped, very wide and flattish, concave on one side, and produced at different levels on the creeping rhizome, the concave side being closely pressed against the object they are growing on, thus forming reservoirs for collecting water.—*Borneo*.

FIG.—*Lindenia*, vi. t. 258.

C. PLANTAGINEA, *Lindley*.—A distinct and desirable species, with elongate terete pseudobulbs, oblong-lanceolate undulate leaves, and pendulous racemes of flowers, which are of a greenish-yellow, having a white lip streaked with brown, the middle lobe crested with perpendicular fringed plates.—*India*.

C. ROSSIANA, *Rchb. f.*—The flowers of this species are described by the late Prof. Reichenbach as cream-white, with ligulate acute sepals and petals. Lip with ochre-yellow side laciniae, the anterior lacinia being of the same colour except the white top. Named in honour of H. J. Ross, Esq., of Castagnole, Italy.—*Burmah*.

C. SANDERAE, *Kränzlin*.—Pseudobulbs ovate tapering, 3 to 4 inches long, two-leaved, spike produced from the apex of the mature bulb. Flowers about the size of *C. barbata*, white with a deep orange blotch on the disk, furnished with three parallel keels which are covered with long dark brown hairs.—*Upper Burmah*.

FIG.—*Reichenbachia*, 2nd ser., ii. t. 56; *Gard. Chron.*, 3rd ser., 1893, xiii. p. 361, f. 52; *Journ. of Hort.*, 1893, xxvi. p. 313, f. 59.

C. SANDERIANA, *Rchb. f.*—A very pretty new species discovered by Förstermann. Our experience of it is that it is an exceedingly slow grower and shy bloomer. Pseudobulbs ovoid, costate, about 2 inches in length. Leaves about 1 foot in length, 2½ inches in width, ribbed, cartaceous. The flowers are snow-white; the anterior portion of the lip is yellow with white markings; crest yellow, side laciniae striped with brown.—*Native country not stated*.

FIG.—*Journ. of Hort.*, 1892, xxv. p. 59, f. 9.

C. SPECIOSA, *Lindley*.—A free-flowering evergreen plant, growing about 8 inches high. The plant has ovate-oblong ribbed monophyllous pseudobulbs, oblong-lanceolate five to seven-nerved leaves, and short erect peduncles bearing two or more flowers, which are nearly 4 inches in diameter, and are

developed at different times of the year, lasting long in bloom. The sepals and petals are pale tawny or olive-green. The lip, which is large and broadly oblong in form, is very handsome, yellow outside, variously blotched and veined inside with deep crimson or pitch-brown, except the broad apex, which is white, and fringed as well as crested; two deep crests, nearly as long as the lip, are very prominent along the centre, and copiously fringed with stellated hairs. There are two varieties of this species, one of which is far superior to the ordinary form. These plants are very useful, as they are almost always in flower.—*Jara*.

FIG.—*Bot. Reg.*, 1846, t. 23; *Bot. Mag.*, t. 4889; *Moore, Ill. Orch. Pl.*, *Coelogyne*, t. 5; *Vriese, Ill. Orch.*, tt. 1, 11; *Blume, Bijdr.*, t. 51.

SYN.—*Chelonanthera speciosa*.

C. TOMENTOSA, *Lindley*.—A very distinct species with pendulous racemes; stem and flower stalks covered with minute reddish-brown hairs. Pseudobulbs ovate 2 to 3 inches long. Flowers about 2 inches across, pale reddish-brown, lip three-lobed, side laciniae white streaked with red.—*Borneo*.

FIG.—*Veitch's Man. Orch. Pl.*, vi. p. 52.

C. VISCOSA, *Rchb. f.*—A rare species, nearly allied to *C. flaccida*, yet very distinct from that plant. The pseudobulbs are fusiform, bearing dark green leaves, which are tapered towards the base. The sepals and petals are white, and the lip is white, with the side lobes broadly streaked with rich brown. It blooms during summer.—*India*.

COLAX, *Lindley*.

(Tribe Vandene, subtribe Cyrtopodieae.)

A small genus, nearly related to *Lycaste* and *Maxillaria*, but separated from them by the sub-globose, not ringent flowers, and by the flat spreading segments of the perianth. The group includes two Brazilian species.

Culture.—The species here named is well deserving of attention. It should be potted in peat and sphagnum with good drainage, and placed in the *Cattleya* house.

C. JUGOSUS, *Lindley*.—A very interesting plant, with elongate-ovoid pseudobulbs 2 to 3 inches long, lanceolate acuminate leaves 6 to 9 inches long, of a dark green, and handsome flowers two or three on a spike, and about 2 inches in diameter; the sepals are pale cream colour, the petals white, with numerous transverse blotches of rich dark chocolate-purple, and the lip white, smaller than the petals, velvety, and covered with fleshy ridges, three-lobed, the lateral lobes rounded erect, minutely dotted with purple, the middle lobe semi-circular, streaked and splashed with dark blackish-purple.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5661; *L'Illust. Hort.*, 3 ser., t. 96; *Xenia Orch.*, i. t. 41; *L'Orchidophile*, 1881, p. 36; *Lindenia*, viii. t. 372; *Veitch's Man. Orch. Pl.*, ix. p. 67.

SYN.—*Maxillaria jugosa*.

COMPARETTIA, Poeppig et Endlicher.

(Tribe Vandeeae, subtribe Oncidieae.)

This is a small genus, of slender dwarf-growing pseudobulbous plants with solitary leathery leaves and drooping racemes of showy flowers, which are peculiar in having a spur to the sepals and a double spur to the lip, the latter being included in those of the sepals. The species here described are the best that have come under our notice. They are very pretty evergreen plants, and distinct from any other Orchids. The few known species come from the Andes of South America, and Central America.

Culture.—The species of this genus should be grown in the Cattleya house, where they can be well shaded from the sun. They are best grown on blocks of wood, or in baskets, with live sphagnum moss, and suspended from the roof, with a liberal supply of moisture in the growing season—in fact, they never should be allowed to get dry, or they will suffer. The flowers proceed from the base of the pseudobulbs, and continue in beauty a considerable time.

C. COCCINEA, Lindley.—A charming little plant, with the habit of a strong *Sophranitis grandiflora*. The pseudobulbs are small, and bear oblong leathery leaves, which are bright green above and purplish beneath; from the apex of the young growing bulbs issues a slender terminal scape supporting a nodding raceme of from three to seven brilliant scarlet and orange flowers, rendered more conspicuous by their broad flat obcordate lip, and their very long subulate spurs. It blooms during the months of November and December; and is doubly valuable at this season on account of its brilliant colours.—*Mexico, Brazil*.

FIG.—*Bot. Reg.*, 1838, t. 68; *Maund, Bot.*, iv. t. 186; *L'Illustr. Hort.*, t. 472; *Moore, Ill. Orch. Pl.*, Comparettia, t. 1.

C. FALCATA, Poep. et Endl.—A pretty plant, similar in habit to *C. coccinea*. It has smooth oblong clustered pseudobulbs, bearing each a solitary lanceolate leaf, and from the base of the leaf a filiform pendent scape, with an open raceme of deep crimson-purple flowers, which have a broadly obcordate lip and a subulate spur. It does not require great heat.—*Peru*.

FIG.—*Bot. Mag.*, t. 4980; *Poep. et Endl., Nov. Gen.*, i. t. 73; *Lindenia*, iv. t. 163; *Orchid Album*, viii. t. 359; *Journ. of Hort.*, 1883, xvii. p. 309, f. 34.

C. MACROPLECTRON, Rehb. f.—This very handsome species is exceedingly floriferous. It has small oblong truncate compressed pseudobulbs, with the angles rounded, and short bright green oblong ligulate leaves. The drooping flower spikes are produced from the base of the bulbs, and bear five or more flowers. The sepals and petals are rose colour, distinctly spotted with rosy-purple, while the lip, which is very large in comparison to the sepals and

petals, is magenta-rose, marked with a few rosy-purple spots at the base and softening off towards the margin. In addition to this the flowers are furnished with spurs about 2 inches long. The blossoms are produced in July and August. We have seen a fine specimen of this in the collection of F. A. Philbrick, Esq., Q.C., Oldfield, Bickley, which bore several spikes of its charming flowers.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 65 ; *Bot. Mag.*, t. 6679.



COMPARETTIA MACROPLECTRON.

C. SPECIOSA, *Rehb. f.*—A very beautiful species, bearing loose racemes of numerous large flowers, which are remarkable for their broad lip and long spur. The sepals and petals are light orange with a cinnabar glow; and the lip has the front lobe sub-quadrate and emarginate, about one and a quarter inch wide, with a very short claw and a small keel between the basal auricles, the colour being of the finest cinnabar, orange at the base. The spur is minutely pilose, and more than an inch and a half in length. It has been flowered and exhibited by Sir Trevor Lawrence, Bart., and awarded a first-class certificate.—*Ecuador*.

FIG.—*Orchid Album*, v. t. 233.

CORYANTHES, *Hooker*.

(Tribe Vandeae, subtribe Stanhopieae.)

The flowers of these plants are very extraordinary-looking objects. They are of large size, and before they open are of the shape of a Chinese foot; after opening, the large sepals, which at first are spread out, soon collapse, as do the smaller petals; the lip is pendulous from the end of a stout arm or claw, beyond which, at the base, it is developed into a hood-like body (hypochil), and at the apex terminates in a helmet-shaped pouch (epichil), the hinder part of which (mesochil) is involute; the pouch is connected with the hood by a hollowed fleshy stalk, which in some of the species is encircled by transverse fleshy folds and ridges; near the base of the arm are a pair of finger-like lobes which secrete a sweet fluid, and this, as long as the flower is in vigour, continues to drip from them into the pouch. The plants are evergreen and pseudo-bulbous; the leaves lanceolate plicate, 10 inches long, and 2 or 3 inches broad. They produce their flowers from the base of the bulbs on a drooping spike, four or five together. The few species, some five or six altogether, are found in Tropical South America.

Culture.—These plants grow best in baskets with moss and peat and good drainage, and require a liberal supply of water at the roots during their period of growth, and also a good brisk heat. They are found growing on the outside branches of trees, where they get more sun than many of our Orchids, and we believe the reason why growers have been rather unsuccessful with this genus is that they have treated them in a similar manner to *Stanhopeas*, and given them too much shade. After their growth is finished, they should be kept rather dry, but not so much so that their bulbs may become at all shrivelled. They are propagated by division of the pseudobulbs.

C. BUNGEROTHII, Rolfe.—We have not seen this new species, but it is described by Mr. Rolfe as follows:—"Pseudobulbs ovoid oblong $2\frac{1}{2}$ inches long; leaves narrow lanceolate, acute, 1 foot long, peduncle one-flowered, $1\frac{1}{2}$ feet long, dorsal sepal elliptic ovate, obtuse, $2\frac{1}{2}$ inches long and $1\frac{1}{2}$ inch broad, lateral sepals oblique, linear lanceolate acute, 6 inches long, 2 inches broad, petals similar, obtuse, 3 inches long, $\frac{3}{4}$ inch broad; lip $\frac{3}{4}$ inch long; sepals pale greenish-white, covered with purple spots, petals whiter, covered with larger and more numerous spots, lip yellow at the base passing into brownish-yellow, the hood orange inside, having a great number of large reddish-brown spots." Blooms in May.—*Venezuela*.

FIG.—*Lindenia*, vi. t. 244.

C. LEUCOCORYS, Rolfe.—This is another new and beautiful species, described by Mr. Rolfe in the *Lindenia* as follows:—"The dorsal sepal is sub-orbicular, with a folded point, $1\frac{1}{2}$ inch in diameter, tinted and striped with clear purple brown, on a greenish-yellow ground; the lateral sepals are oblique-oblong, falcate, sub-obtuse, 2 inches wide and over 4 inches long, rolled over in a curious manner, of a greenish-yellow colour, striped with clear purple-brown. Petals linear, oblong, falcate, obtuse, $2\frac{3}{4}$ inches long, $\frac{1}{2}$ inch broad, white, tinted and obscurely striped with clear purple in the middle. The pouch of the lip is tinted and marbled with a rich rosy-purple on a whitish ground, while the hood is ivory white." Flowers in June.—*Peru*.

FIG.—*Lindenia*, vii. t. 293.

C. MACRANTHA, Hooker.—One of the best of the genus, the flowers being of a rich yellow speckled with red, the hood of the lip and a portion of the pouch rich brownish-yellow. It blossoms in May, June, and July, and lasts about three or four days in perfection. This plant ought to be in every collection.—*Caracas*.

FIG.—*Bot. Reg.*, t. 1841; *Piscatorea*, t. 30; *Hook., Bot. Miscell.*, t. 80; *Paxton, Mag. Bot.*, v. p. 31, with tab.; *Hart, Parad.*, ii. t. 4.; *Veitch, Man. Orch. Pl.*, ix. p. 105.

SYN.—*Gongora macrantha*.

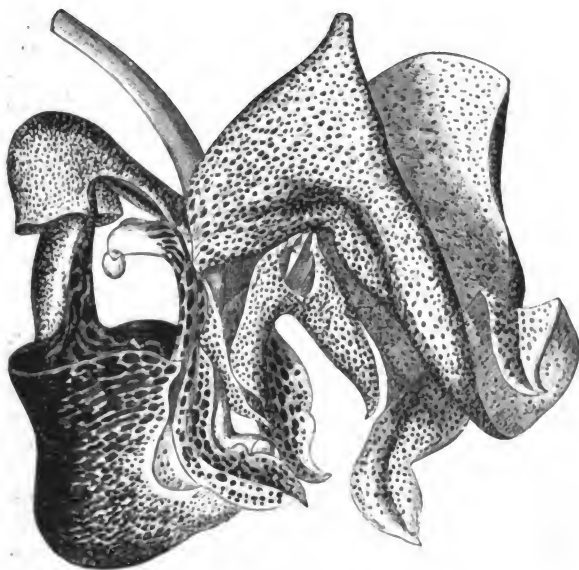
C. MACROCORYS, Rolfe.—A charming species with delicately-tinted flowers, which are said to resemble *Stanhopeas* somewhat in colour. The hood is much more elongated than in the other species of this genus, while the cavity of the pouch is very small. The flowers are pale greenish-yellow, covered with numerous small reddish-brown spots and stripes, while the interior of the pouch is covered with larger spots of the same colour.—*Peru*.

FIG.—*Lindenia*, viii. t. 342.

C. MACULATA, Hooker.—This species has flowers of a light yellow, spotted with dull crimson; the hood is yellow, and the pouch blotched on the inner side with dark purple. It blooms during the summer months, and lasts but three days in beauty.—*Demerara, Venezuela*.

FIG.—*Bot. Mag.*, t. 3102; *Id.*, t. 3747 (var. *Parkeri*); *Maudsl. Bot.*, v. t. 228; *Moore, Ill. Orch. Pl.*, *Coryanthes*, t. 1 (var. *Albertinac*); *Hook. First Cent. Orch. Pl.*, t. 62; *Bot. Reg.*, t. 1793.

C. MACULATA PUNCTATA, Lindley.—A very distinct and showy variety,



CORYANTHES MACULATA PUNCTATA.

having large flowers, which, like those of its congeners, are very peculiar in shape. The sepals and petals are pale ochre-yellow, thickly spotted with deep wine purple; the lip has a hood-shaped body near the base, to which a large helmet-shaped pedunculate appendage is attached; the hood is yellowish, spotted and blotched with deep wine purple, the pouch heavily marked, the purple colour almost covering the anterior side. This plant has been well flowered by

W. Macdonald, Esq., Woodlands, Perth. It blossoms during October and November.—*Demerara*.

FIG.—*Bot. Reg.*, t. 1793; *Orchid Album*, iii. t. 98; *L'Orchidophile*, 1887, p. 111.

C. SPECIOSA, Hooker.—This singular species, which is quite characteristic, grows about a foot high. The large grotesque flowers are pale yellow, the cup satiny orange, and the pouch reddish or tawny yellow; they are produced in April or May, and last three or four days in bloom.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2755; *Annales de Gand*, 1846, t. 51 (var. *ritellina*); *Butem. Orch. Mex. et Guat.*, t. 36; *Hook. First Cent. Orch. Pl.*, t. 61.

SYN.—*Gongora speciosa*.

CYCNOCHES, *Lindley.*

(*Tribe Vandeae, subtribe Stanhopieae.*)

A very singular genus of plants, whose flowers are of a most peculiar form, usually bearing more or less resemblance to the Swan. They are not thought much of by many cultivators of Orchids, but some are well worth growing, as they are of easy culture, and produce their flowers freely. The stems, which are thick and fleshy, are from 6 to 10 inches high, and have three or four large plicato-venose leaves with a sheathing base, which, being deciduous, are lost as soon as they have finished their growth. The large peculiar-shaped flowers are produced in erect or nodding racemes from the base of the pseudobulbs; they have spreading sepals and petals, a fleshy lip contracted at the base, and a very long slender arcuate column, which is somewhat thickened at the apex. Some eight or ten species of Tropical America are known.

Culture.—They are best grown at the coolest end of the East Indian house, in pots, with rough fibrous peat and good drainage, and should have a liberal supply of water at the roots in their growing season; afterwards they may be kept much cooler, and should be placed near the glass, to receive all the light possible. They are very impatient of moisture during their season of rest, being speedily destroyed if at all over-watered. When they begin to grow they must be moved back into heat. They are propagated by dividing the pseudobulbs when they begin to start.

C. AUREUM, *Lindley.*—A very attractive and noble species, known to many by the name of the Golden Swan Orchid. The flowers are closely set in a long drooping raceme, and are rather large, with lanceolate flat sepals, petals of similar form, but rolled back from the tip, and a small short-stalked lip with a roundish disk, the edge of which is broken up into short curved processes, forked at the point, the two lower ones larger and distinct. It will succeed well under the treatment recommended above.—*Central America.*

FIG.—*Part. Fl. Gard.*, iii. t. 75; *Lem. Jard. Fl.*, t. 264.

C. BARBATUM, *Lindley.*—A singular and curious plant which appears to connect *Cycnoches* with *Gongora*. It has ovate compressed pseudobulbs $1\frac{1}{2}$ inch long, solitary elliptic oblong plicate leaves, and radical, dark purple scapes a foot long, terminating in a drooping raceme of equal length, bearing many (50—80 fide Rchb.) narrow-petalled but large and handsomely spotted flowers, of an orange-yellow dotted with dark purple, the lip white tinged with yellow, and spotted with blood-red, formed of two portions, the hypochil or basal part

with two large rounded wings, and the front or epichil cordate ovate and jointed on to the hypochil. The column is very long, slender, and arched, enlarged and hooded at the apex.—*Costa Rica, New Grenada.*

FIG.—*Bot. Mag.*, t. 4479.

SYN.—*Polycynis barbata.*

C. CHLOROCHILON, *Klotzsch*.—A very interesting species, commonly called the Swan Orchid, with the usual fleshy stems and ribbed leaves, the



CYCLOCHES CHLOROCHILON.

(From the *Gardening World*.)

flowers of which are large, fleshy, of a yellowish-green colour; lip oblong obovate, abruptly acute, with a prominent boss on the central part, creamy, almost white in front, the basal part yellow with a large blackish-green, hollow, oblong

blotch; they are produced in June or July, and last three weeks in good condition if kept dry.—*Demerara*.

FIG.—*Lindl. Sert. Orch.*, t. 16; *Hart. Parad.*, i. t. 2; *Gard. Chron.*, 3 ser., 1888, iii. p. 145, fig. 24; *Orchid Album*, vi. t. 263; *Reichenbachia*, 2nd ser., i. t. 39; *Gardening World*, ii. p. 12; *Journ. of Hort.*, 1888, xvii. p. 471, f. 54.

C. LODDIGESII, *Lindley*.—A very curious Orchid. It has short fusiform stems, covered by the sheathing bases of the distichous broad lanceolate leaves, and produces its large attractive fragrant flowers from the top of the stem in drooping racemes of six or eight together; they are 4 inches across, the sepals and petals of a brownish green, the former with darker spots, and the latter spotless, but bearing some resemblance to the expanded wings of a Swan; the trowel-shaped lip is whitish or flesh-coloured, spotted with blood-red. This plant often produces two kinds of flowers on one plant very distinct from each other. It blooms in July and August, and continues in perfection for three weeks. Sir W. J. Hooker compares the long curved column thickened at the end to the inflated throat of the dreaded Cobra de Capella. A desirable species, which ought to be in every collection.—*Surinam*.

FIG.—*Bot. Reg.*, t. 1742; *Bot. Mag.*, t. 4215; *Id.*, t. 3855 (var. *leucociliatum*); *Lodd. Bot. Cab.*, t. 2000; *Knowles and Westc., Floral Cab.*, t. 15; *Hart, Parad.*, ii. t. 13; *Hook. First Cent. Orch. Pl.*, t. 48.

C. PENTADACTYLON, *Lindley*.—This is a curious species with fusiform fleshy stems, and broad plicate leaves. The flowers are very large, in short upright racemes, the colour being yellowish-green, banded transversely with bold blotches of brown. It flowers at different times of the year, and lasts long in beauty.—*Brazil*.

FIG.—*Bot. Reg.*, 1843, t. 22; *Veitch's Man. Orch. Pl.*, ix. p. 144; *Gard. Chron.*, 3rd ser., 1889, vi. p. 188, fig. 26; 1893, xiii. p. 80, fig. 16, p. 597, fig. 87, p. 599, figs. 88, 89; *Journ. of Hort.*, 1893, xxvi. p. 95, fig. 14; *Gard. Mag.*, 1893 (Supplement) Feb. 11th.

C. VENTRICOSUM, *Bateman*.—A free-flowering Orchid, with fleshy stems about a foot high, covered by the sheathing bases of the lanceolate plaited leaves, and having drooping racemes of flowers proceeding from amongst the upper leaves, the individual blossoms large and sweetly scented, with broadish sepals and petals which are greenish-yellow, the lip white, the base presenting a blackish callosity where its short claw connects it with the column. This species sometimes sports to *C. Egertonianum*. It blooms in June, July, or August, lasting fresh about three weeks.—*Guatemala*.

FIG.—*Batm. Orch. Mex. et Guat.*, t. 5; *Bot. Mag.*, t. 4054 (var.); *Maudsl. Bot.*, ii. t. 54; *Hook. First Cent. Orch. Pl.*, t. 49.

CYMBIDIUM, *Swartz*.

(Tribe Vandeeae, subtribe Cymbidieae.)

Of the numerous species of this genus, but few are admissible into a choice selection of Orchidaceous plants; nevertheless, some of them are very handsome and delicate in colour. They are all evergreen plants, with close-set tufts of long leathery or shorter fleshy leaves; some

of them large-growing, with short pseudobulbs, from which the leaves and flowers proceed. The flowers are large, loosely racemose, the racemes being often long and pendulous. Some thirty species are described, chiefly from India, the Malayan Archipelago, and China, but a few outlying species occur in Africa, Australia, New Caledonia, and Japan.

Culture.—They succeed best grown in the *Cattleya* house, and are generally free-growing plants, some of them producing pendulous spikes as much as 2 to 3 feet long. They require plenty of pot room, as they send out thick fleshy roots very freely. We grow them in rough fibrous peat and loam, with good drainage, allowing them a liberal quantity of water at the roots during their period of growth, but less afterwards. Propagation is effected by dividing the pseudobulbs.

C. AFFINE, Griffith.—This species is of recent introduction, and flowers when in a very small state. The growth is somewhat in the way of that of *C. eburneum*, but the leaves are considerably broader. The flowers are deliciously scented, and are produced in racemes upon upright scapes; they are intermediate in size between those of *C. eburneum* and *C. Mastersii*; the sepals and petals white, the lip white, blotched with crimson-purple on its anterior part, and the lower part of the throat also crimson-purple; crests golden-yellow.—*India: Assam and Khasya.*

FIG.—*Orchid Album*, iii. t. 140; *Floral Mag.*, 2nd ser., t. 346; *Griff. Notul.*, iii. t. 291.

C. BAMBUSAEFOLIUM.—See *ARUNDINA BAMBUSAEFOLIA*.

C. DAYANUM, Rchb. f.—A very distinct and pretty kind, somewhat resembling *C. eburneum* in appearance. It has tufts of very long (4 ft.) narrow thick-textured leaves, and many-flowered racemes, which are not erect as in *C. eburneum*, but pendant; the flowers are yellowish-white, marked with port wine-coloured streaks in the centre of the sepals and petals, and a border and numerous small streaks of the same colour on the lip.—*Assam.*

C. DEVONIANUM, Paxton.—A very distinct as well as rare and handsome species, named in honour of the Duke of Devonshire. It has roundish-oblong pseudobulbs, ovate leathery lanceolate leaves, and radical peduncles bearing a drooping raceme of fifteen or more flowers; the sepals and petals are pale greenish-yellow slightly spotted with crimson-purple, the lip bluntly ovate, being of a purplish crimson with a large blackish-purple spot on each side. It blooms during April and May.—*India.*

FIG.—*Orchid Album*, iv. t. 170; *Paxton, Mag. Bot.*, x. p. 97, with tab.; *Journ. of Hort.*, 1889, xviii. p. 401, fig. 65; *L'Orchidophile*, 1893, p. 48.

C. EBURNEO-LOWIANUM, Hort. Veitch.—This distinct hybrid is the result of a cross between *C. eburneum* and *C. Lowianum*. It is described in the



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ers' Chronicle.)

Gardeners' Chronicle, 3rd ser., 1889, v. p. 363, as follows:—"Vegetation nearer that of *Cymbidium eburneum* than of *C. Lowianum*. Pseudobulbs ovoid, compressed, $2\frac{1}{2}$ to 3 inches long, with 3 to 4 equitant leaves on each side, gradually longer upwards, and an apical one, all broader than in *C. eburneum*, but narrower than in *C. Lowianum*, and with the characteristic pale basal band of the last-named species. Raceme shorter than the leaves, as in *C. eburneum*, but shorter, and covered with long, narrow, and very acuminate bracts, as in that species. The raceme in the present instance is three-flowered, but the number will probably be greater as the plant gains strength. Flowers equal in size to those of the best *C. eburneum* forms, and delightfully fragrant; sepals and petals similar and sub-equal, light nankeen-yellow, almost ivory-white, oblong-lanceolate, the petals and lateral sepals spreading, the dorsal sepals bent forwards; lip nearly as in *C. Lowianum*, ivory-white on the inner side, with a V-shaped red-crimson blotch on the reflexed front lobe; lamellae of the disk bright yellow. Column ivory-white, with a reddish-crimson stain next the anther-case."—*Garden Hybrid*.

C. EBURNEUM, Lindley.—A remarkably handsome evergreen species, one of the finest of the genus. It is of very compact growth, forming graceful tufts of distichous linear-lorate foliage. The spike is erect, about 9 to 12 inches high, the flowers very large and fragrant, with pure white sepals and petals, and a lip of the same colour, with a crispy front lobe, and having a bold band of yellow in the centre, behind which is a long yellow fleshy pubescent crest. It blooms in February and March, and lasts a long time in perfection. A specimen shown by Mr. Mill, gardener to Lord Rendlesham, some few years ago bore twenty-nine of its beautiful flowers, as figured in the *Gardeners' Chronicle* cited below.

There are three varieties; of these a very pretty one grown by the late J. Day, Esq., Tottenham, is of smaller growth than the type, the flowers not so large, but the sepals and petals pure white, as also is the lip, which has a blotch of yellow in the centre and rose-coloured spots on each side.—*Khasya*: elevation 5,000—6,000 feet.

The variety **WILLIAMSIANUM**, Rehb. f., has the front lobes of the lip and the tips of the side lobes light purple.

FIG.—*Bot. Reg.*, 1847, t. 67; *Bot. Mag.*, t. 5126; *Batem. Second Cent. Orch. Pl.*, t. 177; *Paxton, Mag. Bot.*, xv. p. 145, with tab.; *Jennings, Orch.*, t. 16; *Warner, Sel. Orch. Pl.*, i. t. 27; *Gard. Chron.*, n.s., xvii. p. 497, fig. 78 (specimen plant); *L'Orchidophile*, 1882, p. 297; *Veitch's Man. Orch. Pl.*, ix. p. 15; *Orchid Album*, x. t. 467.

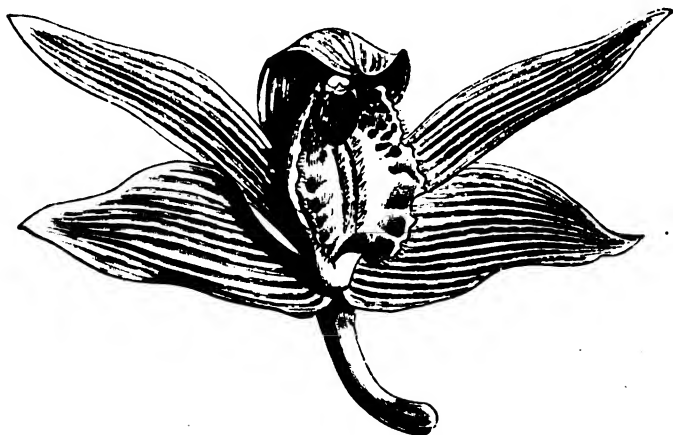
C. ELEGANS, Lindley.—A very rare and curious species, with linear-ensiform leaves and producing many-flowered, nodding racemes of cylindraceous, pale tawny-yellow flowers, which are spotted inside the lip with blood-red and have the peculiarity of remaining half closed. It is nevertheless worthy of cultivation on account of the distinct colour of its flowers, which are produced in autumn.—*India*: *Nepaul*.

FIG.—*Lindl. Sert. Orch.*, t. 14; *Orchid Album*, ix. t. 430; *Bot. Mag.*, t. 7007.

SYN.—*Cyperorchis elegans*.

C. ENSIFOLIUM ESTRIATUM, *Lindl.*—This distinct variety was imported by us from Assam, and is worthy of cultivation on account of its sweet perfume. The flowers have narrow segments; sepals green, lined with red; petals white, lined with purple; lip white, mid-lacinia yellow, spotted with brown.—*Assam*.

C. GIGANTEUM, *Wallich*.—Though not so handsome as some others, nevertheless makes a good plant for winter blooming. It is a rather large-growing kind, with numerous distichous ensiform leaves, which become dilated at the base and closely invest the large oblong pseudobulb. The scapes are radical,



CYMBIDIUM GIGANTEUM.

2 to 3 feet long, many-flowered and nodding; the flowers are fragrant, rather large, yellowish-green, striped with purple, and the lip yellow, densely spotted, sometimes round the margin only, with bright crimson; they are produced during the winter season, and last long in perfection, if kept dry.—*Nepaul*.

FIG.—*Lindl. Ser. Orch.*, t. 4; *Bot. Mag.*, t. 4844; *Parton, Mag. Bot.*, xii. p. 241, with tab.; *Orchid Album*, vi. t. 284.

C. GRANDIFLORUM.—See CYMBIDIUM HOOKERIANUM.

C. HOOKERIANUM, *Rehb. f.*—An attractive species, similar in its habit of growth to *C. giganteum*, with tough leathery strap-shaped distichous leaves, 2 feet long, striped with yellow along their sheathing base. The scape is radical, erect, nodding in the upper floriferous part. The individual blossoms are very large, 4 to 5 inches in diameter, the sepals and petals yellowish-green, and the lip straw-coloured, deeper yellow at the margins, near which, on the crispy ciliate front lobe, are large blotches of rich crimson-purple, while the flat fringed acute-angled side lobes are covered with smaller crimson dots; a pair of velvety crimson-spotted lamellae occupy the disk. It should be grown in a pot, and kept in the *Cattleya* house, for which it is well adapted.—*Sikkim Himalaya*.

FIG.—*Bot. Mag.*, t. 5574; *Batcm. Second Cent. Orch. Pl.*, t. 187; *Gard. Chron.*, 3rd ser., 1892, xi. p. 267, f. 37; *Journ. of Hort.*, 1893, xxvi. p. 153, f. 27 (*C. grandiflorum*).

SYN.—*C. grandiflorum*.

C. HOOKERIANUM PUNCTATUM, *Cogniaux*.—A fine variety, which differs from the type by the petals and sepals being yellowish-green spotted with purple-brown at the base, and the orange-yellow lip.

FIG.—*Lindenia*, ix. t. 339.



CYMBIDIUM HOOKERIANUM.

(From the *Journal of Horticulture*.)

C. HUMBLOTII, *Rolfe*.—This interesting species, a specimen of which was exhibited in June, 1892, by C. Ingram, Esq., of Godalming, is described in the *Gardeners' Chronicle*, 3rd ser., 1892, xii. p. 8:—"Stems rhizomatous, about 6 inches long, clothed with persistent sheaths; leaves linear, acute, $1\frac{1}{4}$ to $1\frac{1}{2}$ feet long, 5 to 9 lines broad, leathery, and strongly nerved; panicle branched, erect, 3 feet high, many-flowered; bracts linear-lanceolate, acuminate, $\frac{1}{2}$ to 1 inch long; pedicels $1\frac{1}{4}$ to $1\frac{1}{2}$ inch long; flowers smaller than, but resembling those of *Coelogyne pandurata* in colour; sepals linear-oblong, acute, $1\frac{1}{2}$ inch long, 5 lines broad, light green, the lateral ones strongly falcate, and carinate near the apex; petals concave, lanceolate-elliptical, acute, $1\frac{1}{4}$ inch long by $7\frac{1}{2}$ lines broad, light green, with a few small spots on the lower half; lip 1 inch long, three-lobed; side-lobes very broadly rounded; front lobe elliptical, oblong, obtuse, undulate, yellowish-green, with brownish-black margin and

many similar spots on the disk and side lobes, with an elongated blotch on either side of the lip; disk with a pair of short parallel plates with recurved margins near the base, and three slender crenulate keels in front. Column 5 lines long, broadly clavate, pale green, with many black dots on face, a narrow black margin, and deep-brown anther-case."—*Madagascar*.

C. HUTTONI, *Hook. fil.*—A rare and very remarkable-looking species, growing 12 to 16 inches high, with elongate ovoid furrowed pseudobulbs, tipped by two oblong obtuse thick leathery leaves, and crowded drooping ten-flowered racemes of flowers, on scapes springing from the base of the pseudobulbs; they are very singular in aspect, ringent, the sepals yellow, closely transversely streaked with broken chocolate lines, the petals wholly of a chocolate-brown, and the three-lobed lip greenish-yellow, dotted all over with chocolate; externally the flowers are of an olive-green colour.—*Jara*.

FIG.—*Bot. Mag.*, t. 5676.

C. HYACINTHINUM.—See *BLETIA HYACINTHINA*.

C. LOWIANUM, *Rehb. f.*—A very distinct and beautiful species, producing long drooping racemes of from eighteen to twenty flowers on spikes 2 to 3 feet long. These flowers are larger than in *C. giganteum*, about 4 inches across; the sepals and petals yellowish-green, with several faint sepia-brown lines, and the lip cream-coloured, with the large erect side lobes yellow, and having on the anterior part a large velvety-maroon blotch margined with yellow. It flowers in February and March, and remains about 3 months in perfection. This plant was at first thought to be a variety of *C. giganteum*, but the late Professor Reichenbach believed it to be specifically distinct. There are several varieties.—*India: Burmah*.

FIG.—*Floral Mag.*, 2nd ser., t. 353; *Gard. Chron.*, N.S. xi. p. 404, fig. 56; *L'Orchidophile*, 1885, p. 143; *Reichenbachia*, 2nd ser., ii. t. 53; *Warner's Sel. Orch. Pl.*, iii. t. 31; *Vritch's Man. Orch. Pl.*, ix. p. 19; *Orchid Album*, x. t. 471; *Lindenia*, ix. t. 392 (var. *superbissimum*).

C. LOWIANUM MANDAIANUM, *Gower*.—The flowers of this variety are said to be larger than those of the type, and of a bright clear yellow, while the front of the lip is light orange.

SYN.—*C. Lowianum aureum*.

C. MASTERSII, *Griffith*.—A handsome species, much like *C. eburneum* in its tufted distichous narrow ensiform leaves, and its manner of growth, but the flowers, which are produced (seven to ten in number) on upright spikes, are very different in shape, and much smaller, white, with a yellow centre, and have the throat and anterior lobe of the lip spotted with rosy-purple; they are almond-scented. This blooms during the winter, and continues long in flowers.—*India*.

FIG.—*Bot. Reg.*, 1845, t. 50; *Lem. Jard. Fl.*, t. 289; *Part. Fl. Gard.*, iii. t. 78; *Floral Mag.*, 2nd ser., t. 391; *Lindenia*, v. t. 222.

SYN.—*Cyperorchis Mastersii*.

C. MASTERSII ALBUM, *Rehb. f.*—A pretty and chaste variety of the preceding, having pure white flowers, which are deliciously fragrant. This, according to Professor Reichenbach, is distinct from the old spotted form. Flowers during the winter months.—*India*.

FIG.—*Reichenbachia*, ii. t. 66.

C. PARISHII, *Rehb. f.*—A very handsome and distinct species, having fusiform fleshy stems, and distichous foliage similar to that of *C. eburneum*, but broader. The flowers, which are sweet-scented, and produced on upright spikes generally three together, are about the same size as those of *C. eburneum*. The sepals and petals are creamy white, the lip white, with an orange-coloured central band, and ornamented by numerous violet-purple spots; the centre of the front portion of the lip is of a bright orange-colour. This species is extremely rare; on one occasion we paid as much as a hundred guineas for a single plant. It flowers during July and August.—*Moulmein*.

FIG.—*Orchid Album*, i. t. 25; *Xenia Orch.*, iii. t. 224.

C. PENDULUM, *Lindl.*—A very elegant species of large growth, with distichous tufts of leathery ensiform strongly furrowed leaves, 2 to 3 feet long, and very long pendulous racemes of moderate-sized yellowish olive-tinted flowers, having the side lobes and tip of the lip rosy-red, the disk clear white, with two yellow crests on its surface. It blooms in July or August, and lasts long in beauty.—*Sylhet*.

FIG.—*Bot. Reg.*, 1840, t. 25; *Id.*, 1844, t. 24 (var. *brevilabre*); *Roxb. Corom. Pl.*, i. t. 44; *Orchid Album*, x. t. 437.

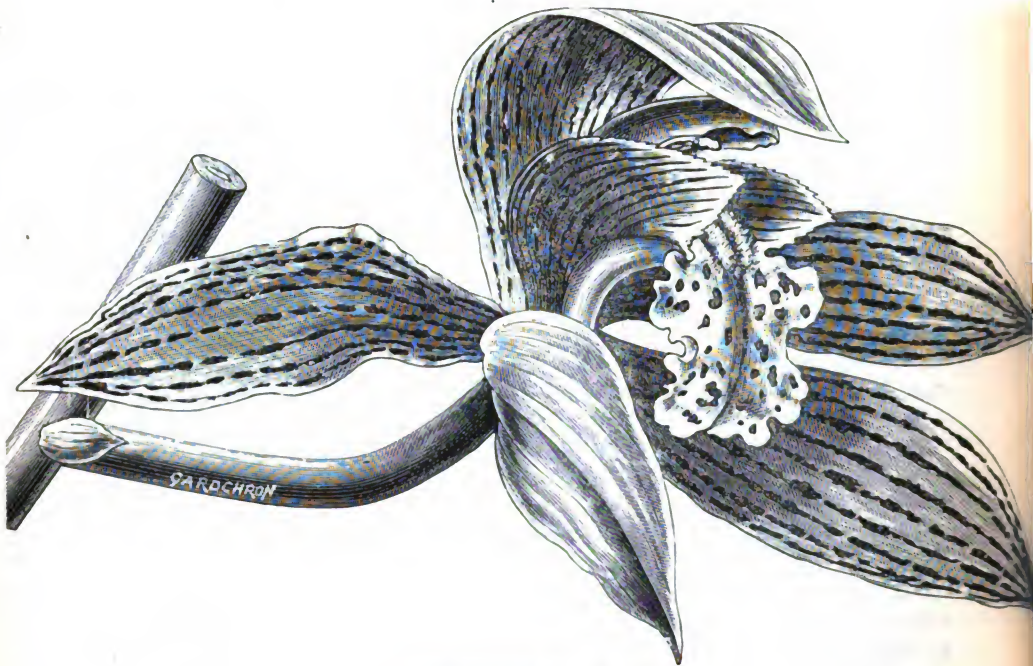
C. PENDULUM ATRO-PURPUREUM, *Hook. fil.*—A fine and very distinct variety of *C. pendulum*, producing splendid racemes of flowers, from 2 to 3 feet in length, and having the sepals and petals of a rich deep purple, yellowish-green externally, and the recurved lip white tinged with rose, and marked with a few crimson-purple spots, the disk yellowish, with two parallel lamellae. It flowers in May and June, and remains a long time in perfection.—*Philippine Islands, Borneo*.

FIG.—*Bot. Mag.*, t. 5710.

C. TIGRINUM, *Parish.*—A very pretty plant of dwarf habit, and, as Major-General E. S. Berkeley remarks in the *Gardeners' Chronicle*, 1887:—"It is found growing on rocky hills in the crevices of the rocks. It is a plant of easy culture, and bears very large flowers in comparison with the size of the pseudobulbs. Many of the *Cymbidiums* are gross in habit, and only suited to large collections. In *C. tigrinum* we have a plant suitable for every collection, compact in habit, taking up very little room, and lasting a long time in flower." It has small roundish-ovate pseudobulbs; oblong lanceolate, slightly twisted leaves, 5 or 6 inches long, and radical scapes, bearing a few (about three) large flowers, of an olive-tinted yellowish green, spotted with red; the lip clawed, three-lobed, the recurved oblong apiculate middle lobe white marked with crossbars of crimson-purple, and the erect side lobes also striped with purple. The plant is quite unlike the other species referred to this genus.—*Tenasserim Mountains*, 6,000 feet elevation.

FIG.—*Bot. Mag.*, t. 5157.

C. TRACEYANUM, *Hort.*—A very distinct and beautiful novelty, intermediate between *C. Hookerianum* and *C. giganteum*; it was first flowered by Mr. A. H. Tracey, of Twickenham; flowers about 5 inches in diameter; sepals



CYMBIDIUM TRACEYANUM.

(From the *Gardeners' Chronicle*.)

and petals yellowish-green, spotted longitudinally with crimson; lip three-lobed yellow, side lobes striped with crimson, front lobe cream-white, spotted with crimson.—*Burmah*.

FIG.—*Journ. of Hort.*, 1890, xxi. p. 535, f. 71; *Gard. Chron.*, 3rd ser., 1891, ix. p. 137, f. 34.

C. WINNIANUM, *Hort. Veitch*.—This handsome hybrid is the result of a cross between *C. giganteum* and *C. eburneum*. Flowers white, lip spotted with crimson. A very desirable novelty.—*Garden hybrid*.

FIG.—*Orchid Review*, i. p. 361, f. 18.

CYNORCHIS, *Thouars*.

(Tribe Ophrydeae, subtribe Gymnadeniaceae.)

A small genus of terrestrial Orchids, with testiculate roots and deciduous stems, from Madagascar and the surrounding islands. They are very closely related to *Habenaria*, from which they differ principally

in having the lip apparently grown to the face of the column and thus connate; sepals connivent; petals fixed under the dorsal sepal; lip spurred, quadri-partite; column short, anther horizontal and lying on its back, with elongated cells.

Culture.—Same as *Habenaria*.

C. ELEGANS, *Rehb. f.*—A charming plant producing lanceolate, acute, light green leaves, about $2\frac{1}{2}$ inches long. The scape bears from 6 to 10 or more flowers; sepals and petals small, of a beautiful rose colour; lip with a trifid front lobe which is rose suffused with rosy-purple.—*Madagascar*.

C. GRANDIFLORA, *Ridley*.—“Sepals oblong-lanceolate, green, red-spotted; petals narrower, white, lip broadly four-lobed. There are two varieties of this species, one called *purpurea*, which has a purple lip spotted at the base, and is scentless; the other is *albata*, the lip of which is white, purple at the base, and is fragrant.”—*Ancanfa, Madagascar*.

FIG.—*Gard. Mag.*, 1893, p. 138; *Gard. Chron.*, 3rd ser., 1893, xiii. p. 197, f. 27.

C. LOWIANA, *Rehb. f.*—Not unlike the preceding in habit, but the leaves are somewhat larger and acuminate. The free limb of the lip in this species has the appearance of being quadri-fid, through the bifurcation of the mid-lobe; petals and sepals greenish-white; lip purplish-rose.—*Madagascar*.



CYNORCHIS GRANDIFLORA.

CYPRIPEDIUM, *Linnaeus*.

(Tribe Cyripedieae.)

This remarkably distinct genus consists partly of terrestrial and partly of epiphytal species, the tropical kinds included in this chapter mostly belonging to the latter series. The various hardy and half-hardy kinds representing the terrestrial group produce erect leafy deciduous stems with the leaves strongly ribbed; while the more numerous race of tropical species have mostly very short stems, bearing leathery leaves, from among which the one or more flowered scapes spring up, all these having one-celled ovaries with parietal placentae. There is a third group of tropical kinds (all American) which have leathery leaves, tall branching flower stems, and three-celled ovaries, with axile placentation.

These latter are referred by some of our highest authorities to the genus *Selenipedium*, but for garden purposes they are more conveniently retained in one group. *Selenipedium* is thus separated from *Cypripedium* by its three-celled ovaries with axile placentae, *Cypripedium* itself having a one-celled ovary with parietal placentation. Many of the species have beautiful variegated foliage as well as flowers, and on this account are worth a place in every collection. The form of the flower is curious, the usually conspicuous parts being the dorsal sepal, erect and highly-coloured, two spreading often elongated petals, and a slipper-shaped pouch or lip, on account of which the genus is generally called "Our Lady's Slipper." The tropical kinds are almost all dwarf, compact, and evergreen, the leaves of some being beautifully chequered. They produce their flowers from the centre of the leaf-tufts, on an upright scape, and rise from 6 inches to 1 foot high or more, the branching *Selenipediums* sometimes reaching 2 or 3 feet in stature. These latter are more floriferous, as they keep continually blooming, producing flower after flower on the same spikes; these should therefore not be cut, but be allowed to remain on the plant.

There are now a very large number of hybrid *Cypripediums* which are very fine and distinct, and new ones are cropping up nearly every day; but whether they are all to be considered as improvements on the existing species is purely a matter of taste. Some of them certainly are so. We give a selection of the best kinds.

Culture.—These plants are of easy culture, and require but little space. The majority of the species are best grown in the East Indian house; some kinds, however, do better in a cooler place, and will thrive in a warm greenhouse. We grow them all in pots with rough fibrous peat, sphagnum moss, charcoal, and sand mixed together. They all require a liberal quantity of water during their period of growth; and as they need but little rest, they never should be allowed to get too dry at the roots. The *Cypripediums*, unlike many Orchids, have no thick fleshy bulbs to supply them with nourishment, and hence require a constant artificial supply. They are propagated by dividing the plants.

✓ **C. ADONIS**, *H. Williams*.—This hybrid was raised in our Nurseries. It is a distinct cross between *C. Spicerianum magnificum* and *C. Harrisianum superbum*, and has been greatly admired when exhibited; it appears to be very free-flowering. The leaves are about 1 foot long, green with darker marbling. The

blooms are carried on stems about 1 foot in length; the dorsal sepal is a lovely green at the base, which passes into dull purple and white in the upper portion, with a median purple stripe; the petals are smooth, light green, mottled and striped with purple, a median purple band running from base to apex; the pouch of medium size, bronzy-green at the apex, purple in the upper part. Flowers in the autumn.—*Garden hybrid*.

C. AINSWORTHII, *Rehb. f.*—A cross between *C. longifolium* and *C. Sedeni*. Leaves plain green, flowers large and showy, dorsal sepal pure white slightly flushed with rose, and veined with soft rose and light green; petals ivory-white at the base, streaked with greenish-yellow in the centre, the terminal portions rose-colour; lip same colour, with a tinge of pink, the infolded portion round the mouth of the pouch white, spotted with purple.—*Garden hybrid*.

FIG.—*Gartenflora*, t. 976.

C. ALBANENSE.—See *C. SEDENII ALBANENSE*.

C. ALBERTIANUM, *Hort.*—"This is a cross effected by M. Jules Hye, of Ghent, between *C. Spicerianum* and *C. insigne Wallacei*. The upper sepal is very large, white with numerous purple rays and spots, the lower sepal pure white, the petals olive-coloured, with a central purplish mid-rib, and numerous similarly-coloured spots in the lower two-thirds; the tips are white, the labellum is like that of *C. insigne*, brownish-green, shining, and flushed with pink along the free edge."—*Garden hybrid*.

FIG.—*Revue Hort. Belge*, 1892, t. 1.

C. ALBO-PURPUREUM, *Rehb. f.*—A handsome hybrid, of branching habit, obtained by Mr. Seden from *C. Schlimii* crossed with *C. Dominianum*. It is of vigorous growth, the long green linear-lorate leaves forming a spreading tuft from which the flower stems arise. The flowers are considerably larger than in *C. Sedeni*; the elongate-ovate dorsal sepal has a slight pinkish tinge on its margin, and the petals, which are from 5 to 6 inches long, are pinkish throughout, and twisted, hanging down beyond the lip. The pouch of the lip, which is rounded at the end, is of a dull crimson-red, the inflected edges at its base being ivory-white with pinkish borders, and nearly covered by rosy-coloured spots. The staminode is a light pink, adorned on each side by many bristles.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1882, p. 9, with fig.; *The Garden*, xxi. p. 332, with fig.; *L'Orchidophile*, 1883, p. 508; *Veitch's Man. Orch. Pl.*, iv. p. 101.

SYN.—*Selenipedium albo-purpureum*.

C. ALCIDES, *Rolfe*.—This hybrid is a cross between *C. hirsutissimum* and *C. insigne*, the result being "a large and delicately-coloured flower, closely approaching *C. hirsutissimum* in shape—certainly a distinct and very pretty hybrid. It was raised by Mr. Maynard, in the establishment of Messrs. F. Sander & Co., of St. Albans, *C. insigne* being the seed parent. Although intermediate in most respects, the influence of the pollen-parent preponderates in the shape of the dorsal sepal, the petals, and the lip. The staminode rather more closely resembles that of *C. insigne*. The colours are fairly intermediate, but more delicate than would be expected from the character of the parents. The prevailing colour is a very pale yellowish-green, faintly suffused with pale

purplish on the dorsal sepal, more decidedly with rosy-purple on the petals, and with pale purple-brown on the lip. The apex and margin of the dorsal sepal are white, and there are a few purple spots at the base, as also at the base of the petals. The plant is now in the collection of R. H. Measures, Esq., of the Woodlands, Streatham" (*Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 40).—*Garden hybrid*.

C. "ALFRED," *N. E. Brown*.—"This was raised from the seeds of *C. venustum*, fertilised with the pollen of *C. philippinense* (*laevigatum*). It is a rather distinct-looking plant, and decidedly intermediate in character between its parents; the leaves are 7 to 8 inches long, and about $1\frac{1}{2}$ to $1\frac{1}{2}$ inch broad, oblong, rather obtuse, of the same bright green, with pale nerves, as in *C. philippinense*, and hieroglyphic markings of a darker green that are not very conspicuous; the surface is minutely papillate, as in *C. venustum*; the under side is dull green, dusted with dull purple, which is also a character of *C. venustum*; the scape is 5 to 6 inches long, purple and hairy, one-flowered in the present instance, but a moderately-developed second bract indicates that on a stronger plant it will be two or more flowered; bract an inch long, green, smooth, with a ciliate, acute keel; ovary $2\frac{1}{2}$ inches long, purple, hairy; upper and lower sepals rather like those of *C. philippinense*, but not so thick, and with rather more nerves, ovate acute; the upper one flat, with the apex slightly curving forwards, white with a pale greenish base, and brownish-green on brownish-purple nerves, and with a faint indication of an arched transverse band across the lower part; the lower sepal slightly concave, white with brownish-green or brownish-purple nerves; petals 3 inches long, $\frac{1}{2}$ to $\frac{3}{4}$ inch broad, strap-shaped, acute, drooping, and twisted half round at the middle, the basal part yellowish with green nerves, and spotted with purple, the apical half entirely purple, both margins ciliate with purple hairs; the lip is very similar to that of *C. venustum*, of the same light bronzy-green with a darker network of veins; the inflexed sides are shining and yellowish without markings; staminode as broad as long, very convex, with a shallow groove down the middle and in front with a tooth on each side that rests on the inflexed sides of the lip, yellowish, reticulated with dark green and pubescent with purple hairs" (*N. E. Brown* in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 294).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxiii. p. 153, f. 23.

C. "ALFRED BLEU," *Hort*.—A fine hybrid raised by M. Alfred Bleu, after whom it is named. It is a cross between *C. ciliolare* and *C. insigne punctatum violaceum*. It has a broad dorsal sepal, which is white and covered with numerous purplish streaks and spots, with the edges ciliate; the lip is reddish-brown.—*Garden hybrid*.

FIG.—*Revue Horticole*, 1893, p. 84 (plate).

C. "ALICE," *N. E. Brown*.—"This novelty was raised from *C. Stonei*, fertilised by *C. Spicerianum*. The leaves are 15 to 16 inches long and about $1\frac{1}{4}$ inch broad, bright shining green with very indistinct darker nerves and cross veins, the under-surface of an uniform paler green; scape 6 inches or more long, purplish-green, sparsely covered with short hairs, two-flowered; bracts rather open, 1 to $1\frac{1}{2}$ inch long, nearly glabrous, pale-green, tinged and nerved with purple; ovary $2\frac{1}{2}$ to 3 inches long, glabrous, purple, or greenish-purple; upper sepal $1\frac{1}{2}$ inch long and nearly as broad, elliptic acute, the sides reflexed almost from the middle, and their edges nearly or quite meeting at the back,

white with a very delicate mauve-pink tinge, and a mauve-purple middle line; the back is suffused with mauve-purple, the base being light yellow; lower sepal ovate-acute, the sides rolled back and embracing the ovary, white on both sides, with the base light yellow on the back; petals about $3\frac{1}{4}$ inches long, linear-falcate, acuminate, twisted, with undulate margins, the lower border being strongly revolute, yellow at the base, passing into greenish-yellow towards the apex, and densely dotted with purple-brown along the upper nerves and mid-line, and more sparingly along the lower nerves; lip like that of *C. Stonei* in shape, with a very shallow groove beneath, purplish, with the basal part and narrow inflexed sides yellowish; staminode broadly trapezoid with a central point, convex, white, pubescent at the base and sides with purple hairs" (N. E. Brown in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 294).

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 481, f. 82.

✓ **C. ALMUM**, *Rchb. f.*—A cross between *C. barbatum* and *C. Lawrenceanum*. Dorsal sepal large, white, stained with purple at the base, veined with green in the centre, the lateral veins broader, rich purple, inferior sepal white, sparingly streaked with purple; petals dull brown, tipped with purple, and bordered on each edge with numerous black wart-like spots; pouch bronzy-brown, suffused with dull purple, the incurved edges soft green with purplish dots.—*Garden hybrid*.

C. AMANDUM, *Rchb. f.*—A very pretty hybrid between *C. insigne* and *C. venustum*, raised by T. C. Bowring, Esq., of Windsor. The leaves are light green, with a sharp dark purple keel at the back. The flowers are of medium size; the dorsal sepal of a delicate yellowish-green, with many light green stripes and many small dark purple spots in the lower portion, margined with white; petals yellowish-green at the base, passing into a delicate shade of purplish-brown on the upper half, spotted with rich dark purple; pouch golden-yellow at the apex, suffused with pale purple near the margin, the whole of the organ covered with greenish and purplish venations. Staminode rich golden-yellow, with a few slight greenish venations in the centre. Blooms in the autumn months.—*Garden hybrid*.

✓ **C. AMESIANUM**, *Williams*.—A cross between *C. villosum* and *C. venustum*; leaves deep green above, spotted and blotched with brownish-purple beneath at the base; dorsal sepal ovate, white, stained with dull brown at the base, and veined with light green, inferior sepal white, suffused with pale green, and veined with deeper green; petals large, superior half chesnut-brown; lower half greenish-yellow; pouch large, obtuse, brown suffused with flesh-colour, green in front, whole flower of the same fresh varnished appearance as that of its first-named parent. It is named in honour of the late Hon. F. L. Ames, of Boston, U.S.A. Blooms in the winter months.—*Garden hybrid*.

FIG.—*Orchid Album*, viii. t. 340.

✓ **C. ANTIGONE**, *Rolfe*.—"This, the reversed cross of *C. Aphrodite*, is a beautiful hybrid, raised from *C. Lawrenceanum*, fertilised with the pollen of *C. niceum*. It was raised by Messrs. James Veitch & Sons. It is a stronger plant altogether than *C. Aphrodite*—in fact, each seems to have taken the character of the seed parents respectively, so far as vigour of growth is concerned. In *C. Antigone* both leaves and flowers are very handsome.

The former are yellow-green, with numerous reticulated dark-green veins, and some irregular blotches of the same colour, which suggest small pieces of some fossil selaginella on a slab more than anything else I can think of; the flowers are white, variously nerved and veined with light purple in a most pleasing manner; they are well intermediate in shape, but the petals and lip bear a strong resemblance to those of *C. niveum*, while the colour of the same parent largely preponderates" (R. A. Rolfe in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 716).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxiii. p. 262, f. 49.

C. APHRODITE, *Veitch*.—A cross between *C. niveum* and *C. Lawrenceanum*. Leaves tessellated and marbled with light green on a dark green ground. Flowers very handsome; dorsal sepal orbicular, white, spotted with rose, and stained at the base with green.—*Garden hybrid*.

C. APICULATUM, *Rchb. f.*—"A cross raised between *C. barbatum* and *C. Bozalli*, by Mr. D. O. Drewett, Riding Mill-on-Tyne, Northumberland. Leaves remarkably broad in the middle, general shape of those of *C. barbatum*, very light green, with obscure reticulate markings; the height of the peduncle is intermediate between that of the parents; it is dark purple, hairy, but not as in *C. Bozalli*, where the hairs remind one of those of a goat; bract much shorter than the green ovary, whose ribs are reddish; sepals and petals as if varnished inside, dorsal sepal cuneate, oblong-acute, with light ochre-coloured margin, and very dark black-purple veins, between which is a lighter reddish-brown tinge; connate, sepals narrower, oblong-acute, green, with reddish-brown veins; petals ligulate, oblong, blunt, acute, somewhat spatulate, a little ciliate on the inner margin, light brown-purple, inferior half yellowish from the middle to base, where there are numerous small purple-blackish spots. The lip has nearly the shape of that of *C. Bozalli*, with well formed, lateral horn-like anguli of the sac, greenish ochre-coloured at base, with some light small brown spots, brown in front. Staminate transversely oblong, apiculate in front, yellow, with a deep green knob in front" (H. G. Rchb. f. in *Gardeners' Chronicle*, n.s., 1886, xxv. p. 617).—*Garden hybrid*.

C. ARGUS, *Rchb. f.*—This is a very distinct species, resembling *C. barbatum* in growth. The oblong-lanceolate sub-distichous dark green leaves are handsomely tessellated with yellow-green. The scapes are from 1½ to 2 feet high, and bear one large showy flower, of which the dorsal sepal is whitish striped with green, the linear-oblong petals, about 3 inches long, whitish, striped with green towards the base, rose-coloured towards the tip, heavily spotted with dark purple spots, many of which are ocellate; the lip purplish-brown, green on the under-side. It flowers in March and April, and is peculiar in the well-marked ocellate spots on the petals.—*Philippine Islands*.

FIG.—*Bot. Mag.*, t. 6175; *Floral Mag.*, 2nd ser., t. 220; *Revue Hort. Belge*, 1888, p. 85; *Reichenbachia*, ii. t. 83.

SYN.—*C. Pitcherianum*, *Manda*.

C. ARGUS MOENSII, *Hort.*—Flowers broader and larger than the type, and more profusely spotted with dark purple.—*Iazon*.

FIG.—*Lindenia*, iii. t. 129.

SYN.—*C. Moensianum*.

C. ARGUS NIGRICANS, *Hort.*—Flowers similar in size to the type, having the dark wart-like spots much crowded, and running together.—*Iuzon*.

C. ARNOLDIANUM, *Manda.*—This distinct hybrid is the result of a cross between *C. superbiens* and *C. concolor*, and is named after Hicks Arnold, Esq., of New York. It is described by Mr. W. A. Manda as follows:—“Leaves 4 inches long by 2 inches wide, light green, with hieroglyphic-like tessellation of dark green; stem 5 inches high, dark brown, with white short down; ovary six-ribbed, slightly downy; flowers large, measuring nearly 4 inches across the petals; dorsal sepal nearly round, slightly recurved on the sides, lemon-colour at the base, extending upwards; the veins are of vinous purple, slightly shading over the ground colour; the lower sepal is of the same colour, only the veins are not so pronounced; petals 2 inches long, very broad, the inner portion lemon-colour, while the outer portion is shaded with vinous purple; three-fourths of the inner circle is covered all over with dark spots, as in *C. superbiens*; lip long, with a narrow opening, bright lemon-yellow at the base, with deep vinous purple veins and dottings in the upper part; the column is light green, and the staminode, which is of a horse-shoe-shape, is lemon-yellow, with purple border. This beautiful hybrid, which is well intermediate between the two parents, was raised at Short Hills, in a flowering state, in less than two years.”—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1890, viii. p. 633, f. 123.

C. ARTHURIANUM, *Rehb. f.*—A handsome, small-growing hybrid, the result of a cross between *C. insigne* and *C. Fairrieianum*. It has ligulate leaves, and flowers having the general appearance of *C. insigne Maulei*. The dorsal sepal is pale yellowish-green, broadly-margined with white on the upper part, veined and spotted with blackish-crimson; the petals are pale green faintly spotted with purple in the lower half, veined with deep crimson in the upper half, and turned downwards like those of *C. Fairrieianum*; the lip is veined and mottled with brown on a pale greenish-yellow ground; staminode bright yellow with a greenish centre. The flowers appear in the autumn months and last a long time in perfection.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1887, p. 209; *Lindenia*, iii. t. 121 (var. *pallidum*); *Orchid Album*, ix. t. 389; *Veitch's Man. Orch. Pl.*, iv. p. 78; *Orchid Review*, i. p. 305, f. 16.

C. ARTHURIANUM PULCHELLUM, *Hort. Veitch.*—This differs from the type in having a broader dorsal sepal, which is covered with larger spots, and the petals being richer and deeper in colour. It was obtained by crossing *C. insigne punctatum violaceum* with *C. Fairrieianum*, the latter being the seed bearer, whereas the typical *C. Arthurianum* was obtained by the reversed cross.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1892, xxv. p. 499, f. 66.

C. ASHBURTONIAE, *Rehb. f.*—A very distinct hybrid, the result of a cross between *C. barbatum* and *C. insigne*. The leaves are ligulate, bidentate at the apex, dark green, faintly reticulated. The dorsal sepal is large, and somewhat as in *C. barbatum*; having brown veins on a pale green ground colour, the petals ligulate, white tinged with green, and veined with purple; lip pale

purple, tinged with yellow, and slightly blotched with purple. This distinct mule was obtained by Mr. Cross, when gardener to Lady Ashburton, of Melchet Park, Romsey.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 1871, p. 1647, f. 348; *Gartenflora*, t. 976.

SYN.—*C. obscurum*.

C. ASHBURTONIAE CALOSPILUM, *Hort.*—A form with larger flowers than the preceding, and having a white border all round the dorsal sepal, which is ornamented with large spots.—*Garden hybrid*.

C. ASHBURTONIAE EXPANSUM, *Rchb. f.*—This variety is very much superior to *C. Ashburtoniae*; the leaves are much shorter, stouter, and broader; flowers much larger and more brilliant in their colouring; dorsal sepal 2 inches across, white striped with green, and regularly spotted with crimson-purple, the spots follow the direction of the nerves; sepals dull pale green, with a few purple spots; petals reddish-brown, faintly striped with green; pouch reddish-brown; staminode dull orange, veined with green. Blooms in November and December.—*Garden hybrid*.

C. ASHBURTONIAE LAUCHEANUM, *Sander.*—"A dark variety with the dorsal sepal more distinctly striped with purple than usual and the petals coppery-purple, which may be traced to the preponderating influence of *C. barbatum*."—*Garden hybrid*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 38.

C. ASHBURTONIAE SUPERBUM, *Williams.*—A very superior form of this old favourite, showing the results of careful selection in hybridising, being a cross between *C. barbatum superbum* and a good variety of *C. insigne*, whereas the parents of the original *C. Ashburtoniae* were only ordinary types; as a consequence we have a much finer flower, being larger and more distinctly and beautifully coloured.—*Garden hybrid*.

FIG.—*Orchid Album*, ix. t. 400.

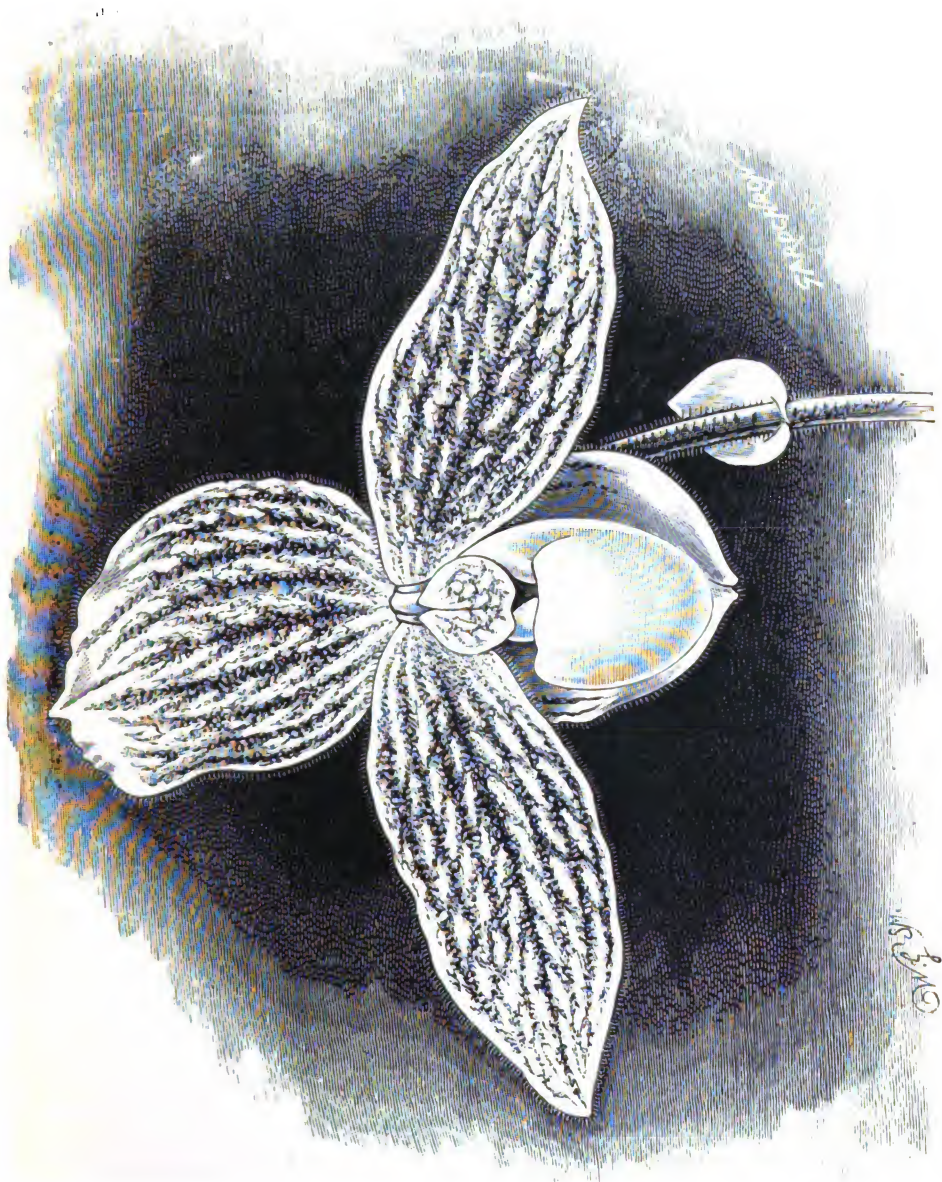
C. ASHWORTHAE, *Hort.*—A hybrid between *C. Leeanum superbum* and *C. selligerum majus*, exhibited by E. Ashworth, Esq., Harefield Hall, Wilmslow. The flowers resemble those of a large *C. Leeanum*, the dorsal sepal is very broad and has the white portion very large.—*Garden hybrid*.

FIG.—*Gard. Mag.*, 1893, p. 705 (woodcut).

C. ATYS.—See *C. FITCHIANUM*.

C. AUROREUM, *Rchb. f.*—A cross between *C. Lawrenceanum* and *C. venustum*. Leaves reticulated with light green on a deeper ground of the same colour. Dorsal sepal white, stained with rose on the edges near the base, profusely streaked with veins of green and purple; inferior sepal smaller, whitish streaked with green; petals pale green at the base, passing into reddish-purple upwards; lip brown, tinged with green, the inflexed portion yellowish, dotted with rose.—*Garden hybrid*.

C. AYLINGI, *Castle.*—A most beautiful and distinct novelty, raised by Mr. Ayling, gardener to A. J. Hollington, Esq., Enfield. It is a cross between



CYPRIPEDIUM AYLINGII.
(From the *Gardeners' Chronicle*.)

C. niveum and *C. ciliolare*; the leaves are similar to those of *C. niveum*, $2\frac{1}{2}$ to 3 inches long, and about 1 inch broad; the sepals, petals, and lip are pure white, and furnished with small purple spots, which are mostly arranged in lines; the petals are narrow, and instead of being ovate as in *C. niveum* are elongate, and have a downward direction.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1890, vii., p. 797, f. 131; *Journ. of Hor.*, 1890, xx. p. 481, f. 74.

C. BARBATO-VEITCHIANUM, *Bleu*.—This hybrid, as its name implies, is a cross between *C. barbatum nigrum* and *C. Veitchii (superbiens)*. The leaves are bright green, amply covered with a number of dark green hieroglyphic markings. The dorsal sepal is well opened, violet rose in the inferior part, margined with white tinted with rose and furnished with crimson-purple veins; petals intermediate in size between the two parents; they are covered with black shining spots; lip brownish-purple, of large size.—*Garden hybrid*.

FIG.—*Lindenla*, v. t. 228.

C. BARBATUM, *Lindley*.—A pretty species, with beautifully spotted leathery oblong-acute channelled leaves, and purple downy scapes bearing each a solitary flower, which has the broad dorsal sepal white striped with purple and green, the linear-oblong fimbriate petals a good deal stained with purple, and having a series of black hairy warts along the upper edge, and the saccate lip dark brownish-purple. It produces its flowers at different times of the year, lasting six weeks in bloom. There are many varieties of *C. barbatum*, some being larger and much brighter in colour than others.—*Malay Peninsula: Mount Ophir*.

FIG.—*Bot. Mag.*, t. 4234; *Bot. Reg.*, 1842, t. 17; *Flore des Serres*, t. 190; *Moore. Ill. Orch. Pl.*, *Cypripedium*, t. 8; *Ann. Sc. Nat.*, iii. t. 13; *Veitch's Man. Orch. Pl.*, iv. p. 13.

C. BARBATUM BIFLORUM, *Hort*.—A handsome variety of *C. barbatum*, but with more elegantly variegated foliage. It grows 4 inches high; the blossoms are produced on a scape 10 inches long, two flowers sometimes appearing on one stem; the dorsal sepal is very handsome, the upper part being white, while the other parts of the flower are purplish-brown. It blooms in February and March, and will keep six weeks in good condition.—*India*.

SYN.—*C. barbatum Crossi*.

C. BARBATUM CROSSI.—See *C. BARBATUM BIFLORUM*.

C. BARBATUM NIGRUM, *Hort*.—A charming variety, producing finely variegated foliage. The flowers are larger than those of any of the other forms of *C. barbatum*, and in colour much darker. This variety is sometimes called *giganteum*, in consequence of its large flowers. It blooms in July and August, and continues six weeks in bloom.—*Mount Ophir*.

C. BARBATUM SUPERBUM, *Hort*.—A fine variety which grows in the same way as *C. barbatum*, but the foliage is brightly variegated. The flowers are handsomer and larger than the type, the lip being very dark, and the dorsal sepal purer white towards the apex; it lasts about six weeks in perfection. This makes a fine plant for exhibition.—*Mount Ophir*.

C. BARBATUM VEITCHII.—See *C. SUPERBIENS*.

✓ **C. BARBATUM WARNERIANUM**, *Moore*.—A very beautiful and compact-growing variety, with small distichous oblong acute distinctly-tessellated foliage. The dorsal sepal is large, recurved towards the apex, white striped with green towards the base, and marked with a broad transverse band of vinous crimson; the petals are fringed, and have a number of bearded warts along the upper edge, their upper halves being pale green striped with dark green, and the lower halves white towards the base, the remaining portion bright purple tipped with white; the lip deep brownish-purple. This plant flowers when very young, in fact every small shoot may be depended upon to produce its spike. It flowers in March, April, and May, lasting six weeks in perfection.—*India*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 11.

C. BARTETI, *Carrière*.—This hybrid, between *C. barbatum* and *C. insignis punctatum violaceum*, was obtained by M. Bauer at the Gardens of La Muette, Paris. It is in the way of *C. Ashburtoniae*. The dorsal sepal is white towards the apex, yellowish-green at the base, veined with purplish-brown; petals pale purplish-brown, veined on their upper halves with a deeper tint of the same colour, inferior halves yellowish-green, spotted with purple; lip reddish-brown; staminode yellow.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1886, p. 121.

C. "BEATRICE," *N. E. Brown*.—This hybrid was raised by D. O. Drewitt, Esq., of Riding Mill-on-Tyne, and is a cross between *C. Boxallii* and *C. Lowii*. "The leaves are about a foot long, and $1\frac{1}{2}$ inch broad, uniform bright green; the peduncle is one-flowered in the specimen at hand, but will probably become two or more flowered as the plant strengthens; the plant is intermediate between that of its two parents; the upper sepal has very revolute margins; the base is heavily marked with chocolate, and streaks of chocolate run out into the light greenish-yellow apical part, the border being whitish; the petals are widely spreading, and of a similar shape to *C. Lowii*; they are about 3 inches long, spatulate, yellowish, spotted with chocolate at the base; the mid-line is chocolate-purple, as is also the part above it about the middle, shading off into light mauve-purple at the apex, the part below the mid-line being pale whitish-yellow, shaded with pale mauve; the lip is rather long and narrow, shining, pale purplish, shading off into ochreous at the apex, and beneath; the border of the mouth is also ochreous" (*N. E. Brown in Gardeners' Chronicle*, 3rd ser., 1889, vi. p. 266).—*Garden hybrid*.

C. BELLATULUM, *Rehb. f.*—A superb species, closely allied to *C. Godfroyae*, with large and broad oblong leaves, which are some 9 or 10 inches long, ground colour very dark green, tessellated and marbled with light green on the upper side, wholly vinous-red beneath, flowers large and massive, dorsal sepal orbicular, incurved at the top, white, in some forms creamy-yellow, and in others flushed with rose, in all cases heavily spotted with dull purple; inferior sepal large, similarly marked; petals very large and broad, oval similarly marked to the dorsal sepal, but the spots larger and more distinct; pouch somewhat small, compressed, and tapering to a point, white dotted with purple; it is a

very free growing plant, thus differing from all the other kinds belonging to this section; flowers during the summer months.—*Native country not stated.*



CYPRIPEDIUM BELLATULUM.
(From the *Gardeners' Chronicle*.)

FIG.—*Lindenia*, iv. t. 149; *Journ. of Hort.*, 1888, xvi. p. 443, f. 60; *Vitch's Man. Orch. Pl.*, iv. p. 15; *Revue Horticole*, 1889, p. 201, f. 53; *Gard. Chron.*, 3rd ser., 1888, iii. p. 747, f. 99; *Id.*, 1890, vii. p. 556, f. 89.

C. BELLATULUM LUTEO-PURPUREUM, O'Brien.—“The entire ground colour is pale apricot-yellow. . . . The sepals and petals have fewer purple markings than the ordinary form, and the blotches are irregular in shape, and often run into each other; they are also confined to the inner two-thirds of each segment nearest to the column. The exterior of the labellum is unspotted, but the interior and the unfolded side lobes have purple

dots. . . . It has flowered two years with G. W. Law-Schofield, Esq., Rawtenstall” (J. O'Brien in *Gardeners' Chronicle*, 3rd ser., 1893, xiv. p. 179).

C. BERENICE, Rolfe.—A handsome hybrid raised by Capt. Vipan, Stibington Hall, Wansford, between *C. Roebellinii* and *C. Lowii*. “Dorsal sepal elliptical-ovate, acute, margin reflexed at base, $2\frac{1}{2}$ inches long by $1\frac{1}{4}$ inch wide, base and centre pale bright green, rest white, a little suffused with blush, a blotch of dark purple at extreme base, then several distinct spots, and above this seven bands, all of the same colour, which rapidly thin out, and are soon lost above the middle; petals drooping, over 5 inches long, $\frac{1}{4}$ inch wide, spirally twisted, a little narrowed near apex; lower third pale bright green, with medium-sized purple-brown blotches, rest light maroon, a little deeper near margin; lip sub-compressed, 2 inches long, pale yellow green, a little veined and suffused with olive-green on front and sides, side lobes unspotted; staminode obcordate-oblong, palest whitish-green, closely reticulated all over with bright green nerves, convex margin hairy” (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 136).—*Garden hybrid*.

C. BINOTII.—See *C. VITTATUM*.

C. BOISSIERIANUM, Rehb. f.—This species is allied to *C. Hartwegii* and has very handsome large flowers. The sepals are covered with a network of green veins on a lighter ground of the same colour, edges undulate; the petals are 4 to 5 inches long, distinctly twisted and undulate at the margins; lip brownish-green spotted in the upper portion. A wonderful species.—*Peru*.

FIG.—*Xenia Orchidacea*, i. p. 176, t. 62; *L'Orchidophile*, 1888, n. 48; *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 143, f. 33; *Journ. of Hort.*, 1887, xiv. p. 91, f. 14.

SYN.—*Scelenepidium Boissierianum*.

C. BOXALLII, *Rehb. f.*—A very distinct and welcome addition to the large group of acaulescent species. In growth it resembles *C. villosum*, as well as in the shape of its flowers. The leaves are broadly ligulate, deep green; the dorsal sepal is greenish, broadly margined with white and heavily spotted with blackish purple nearly to the top; the petals are yellowish-green marked with reddish-brown veins; the lip also is yellowish-green lightly tinged with dull purple. It flowers in January and February. The whole of the flower has a peculiar glazed appearance as in *C. villosum*. This should be grown in the cool house.—*Burmah*.

FIG.—*L'Illustr. Hort.*, 3rd ser., t. 345.

C. BOXALLII ATRATUM, *Rehb. f.*—In this form the flowers are larger than in the type, and more brightly coloured, whilst the blackish or blackish-purple spots on the dorsal sepal are larger and more intense, nearly covering the central area, the whole being margined with white.

FIG.—*Revue Hort. Belge*, 1882, p. 97; *Gard. Chron.*, 3rd ser., 1887, i. p. 210, f. 47; *Reichenbachia*, 2nd ser., i. t. 8.

C. BOXALLII AUREUM, *Hort.*—The petals and lip in this variety are almost wholly yellow, and there are few faint markings on the dorsal sepal.

C. BOXALLII NIGRESCENS, *Hort.*—The dorsal sepal is so profusely marbled and spotted with black that there is hardly any other colour discernible; petals also very dark in colour.

C. BOXALLII ROSEO-MARGINATUM, *Desbois*.—In this variety the dorsal sepal is richly marbled with shining black, broadly margined with white tinted with rose.

C. BRAGAIANUM, *L. Lind.*—This handsome hybrid is the result of a cross between *C. hirsutissimum coerulescens* and *C. Boxallii atratum*, and is intermediate between its two parents. It was raised by the Horticulture Internationale of Brussels, and was dedicated to M. José T. da Silva Braga, of Oporto. Dorsal sepal ovate, margins slightly undulated, green, densely spotted and suffused with blackish-purple margined with white; petals green, similar in shape to *C. Boxallii*, densely spotted with blackish-purple at the base, extending to about half the length; the extremities are suffused with rosy-purple; lip greenish, flushed with pale brownish-purple.—*Garden hybrid*.

FIG.—*Lindenia*, vi. t. 279.

C. BUCHANIANUM, *Gower*.—"This is a beautiful new hybrid, obtained between *C. Spicerianum* and *C. Druryi*. The leaves are very similar to those of the first-named parent, while the flower is larger, the dorsal sepal being only slightly recurved at the edges and pure snowy white, with a broad central streak of crimson, slightly tinged with emerald green at the base; the petals are equally divided by a broad stripe of brownish-crimson, the upper half being of a bronzy hue, the lower half yellowish-green, slightly dotted with brown; pouch-like lip, large for the flower, with a wide opening, yellowish-

green, bronzy in the upper part, the whole having a polished appearance; the interior of the flower is thickly studded with crimson dots and flushed with rosy-pink. This very interesting hybrid has been raised by Mr. Osborne, when gardener to the late H. J. Buchan, Esq., Wilton House, Southampton" (W. H. Gower, in *The Garden*, 1889, xxxv. p. 8).—*Garden hybrid*.

C. BURFORDIENSE, *Rchb. f.*—"The leaves are said to be like those of *C. Bartletti*, but about one-third broader, one-third shorter, as well as a little thicker. The upper sepal is very large cuneate elliptical acute, of a very light rosy-mauve hue, excepting the tip, which is adorned with a white nearly rhombic patch; there are seventeen strong dark purple nerves; the connate sepal is whitish oblong ligulate acute, exceeding the length of the lip; descending petals light greenish at the base, with superior border of the lightest purple, and brownish-purple on the anterior or exterior somewhat dilated part, its nerves green; there are some purple hairs at the base and ciliae around the border; near the superior margin are two very dark mauve-purple lines, and this is, as far as I know, quite novel; in addition to these there are very few (four in the flower at hand) mauve-purple exceedingly short narrow spots or lines; the lip is of the shape of that of *C. Argus*, brown-ochre-coloured underneath, with a yellow border around the mouth of the spur; the inflexed margins of the stalk ochre-coloured, with small red spots; the greatest part of the lip is reddish-brown of the usual tint; the staminode is nearly like that of *C. Argus*, but the lateral teeth are shorter than in *C. Argus*; both the vexillar dorsal sepal and the lines on the petals are very remarkable. It remains in flower a very long time. It is supposed to be a hybrid between *C. Argus* and *C. philippinense* (*laevigatum*); there is much resemblance to *C. Argus*; the latter species might have given the very thick leaves" (R. A. Rolfe, *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 724).—*Garden hybrid*.

C. BULLENIANUM.—See *C. HOOKERAE BULLENIANUM*.

C. CALANTHUM, *Rchb. f.*—A cross between a form of *C. barbatum* and *C. Lowii*; dorsal sepal brown, suffused with a green shade, and streaked with brown, inferior sepal pale green; petals pale green at the base, with a few purple spots, passing into rosy-purple at the tips; lip brownish-purple, the inflexed portion dull purple.—*Garden hybrid*.

C. CALLOSUM, *Rchb. f.*—Leaves broadly oblong, some 9 inches long, marbled and tessellated with bright green, on a very deep green ground; flowers very large, dorsal sepal broadly cordate, white, bearing numerous streaks of unequal length, which are light green at the base, passing upwards into bright purple; inferior sepal smaller, white, veined with green; petals deflexed, ligulate, pale rose, passing into purple at the points, and bearing a few black warts on the upper edge only; pouch large, purplish-brown on the superior side, green beneath. Blooms in spring and early summer.—*Siam or Cochin China*.

FIG.—*Lindenia*, ii. t. 73; *Journ. of Hort.*, 1887, xiv. p. 7, f. 1; *Gard. Chron.*, 3rd ser., 1887, i. p. 315, f. 64; *L'Orchidophile*, 1888, p. 145; *Revue Horticole*, 1888, p. 252 (plate).

✓ **C. CALOPHYLLUM**, *Rehb. f.*—This hybrid was raised by Messrs. Veitch & Sons between *C. barbatum* and *C. venustum*. The leaves are large, with beautiful dark tessellation; the dorsal sepal is similar to that of *C. barbatum*, but has greener nerves; the petals are like those of *C. venustum*, having the same wart-like bodies, and strong bristles on the margins; the lip in shape and colour is akin to that of *C. venustum*, but is much browner than in that species. It flowers during the autumn months.—*Garden hybrid*.

C. CALURUM, *Rehb. f.*—A very handsome noble and free-flowering hybrid raised between *C. longiflorum* and *C. Sedeni* in Messrs. Veitch's nursery. It forms a thick tuft of elongate channelled acute green leaves, with tall branched brownish red stems, bearing in succession large showy flowers, the dorsal sepal of which is pale green with longitudinal purple ribs, the petals $2\frac{1}{2}$ inches long, pale green edged with rosy-red near the base, and wholly bright rosy-red at the apex, narrower and more twisted than in *C. Sedeni*; the lip is deep wine-crimson externally, and very handsome; it belongs to the *Selenipedium* group.—*Garden hybrid*.

FIG.—*Orchid Album*, iii. t. 136; *Florist and Pomol.*, 1884, p. 145, with tab.; *Lindensia*, viii. t. 304.

SYN.—*Selenipedium calurum*.

C. CALYPSO, *Hort.*—A charming hybrid, the result of a cross between *C. Spicerianum* and *C. Bozallii*. The dorsal sepal is like that of the former, while the petals and lip resemble more those of the latter; the colour generally is white and yellow with darker lines and dots.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxiii. p. 559, f. 101.

C. CAMBRIDGEANUM, *Hort.*—This fine *Cypripedium* was imported by Messrs. H. Low & Co. In shape and colour the flowers are like *C. oenanthum*; the dorsal sepal is beautifully veined with dark crimson, and bordered with white; the pouch is greenish, tinged with purple; petals same colour, but a shade darker, with a slight fringe of hairs near the base.—*Native Country not stated*.

FIG.—*Journ. of Hort.*, 1887, xiv. p. 376, f. 66.

C. CANHAMI.—See *C. CHARLES CANHAM*.

C. CANNARTIANUM.—See *C. ROEBELLINI*.

C. CARDINALE, *Rehb. f.*—A very beautiful hybrid raised in the establishment of Messrs. Veitch & Sons; it is a cross between *C. Sedeni* and *C. Schlimii album*, and has the appearance of a gigantic *C. Schlimii*; the dorsal sepal is bluish white faintly striped with green, the petals bluish white with a patch of crimson-purple hairs towards the base; and the lip is similar in shape to that of *C. Schlimii*, but about an inch in diameter and of the same colour; it flowers at different times of the year, as fast as one set of flowers falls another set appears.—*Garden hybrid*.

FIG.—*The Garden*, 1885, xxvii. p. 520; *Orchid Album*, viii. t. 370; *Veitch's Man. Orch. Pl.*, iv. p. 103.

SYN.—*Selenipedium cardinale*.

C. CARICINUM, *Lindley*.—A very curious and elegant Orchid, having a singular grassy or sedge-like appearance, and long creeping rhizomes, totally distinct from those of any other species. It grows a foot or more in height, the flower-spike rising clear of the stiff narrow channelled foliage, and producing from four to seven flowers of a pale green colour, the sepals and petals having a white margin, and the ends being blotched with rich brown, the latter narrow, deflexed, and twisted, and the oblong lip beautifully marked on the inner margin by a row of black dots. The staminode is bordered with black hairs resembling a pair of whiskers. A very remarkable plant, and well adapted for growing in the cool house with *Odontoglossums*.—*Peru*.

FIG.—*Bot. Mag.*, t. 5466; *Flore des Serres*, t. 1648; *Veitch's Man. Orch. Pl.*, iv. p. 59.

SYN.—*C. Pearcei*; *Selenipedium caricinum*.

C. CARRIEREI, *Hort. Gall.*—A cross between *C. venustum* and *C. superbiens*. The leaves are light green, with tessellations of a deeper green; dorsal sepal whitish, suffused and veined with green; inferior sepal much smaller, similarly marked; petals green at the base, rose at the tips, veined with delicate green, bearing numerous black, scattered, wart-like spots on the edges and along the median region; pouch long and narrow, greenish-red, veined with deeper green. Blossoms in spring and summer. Obtained by Mr. Bauer at La Muette in Paris, and exhibited by R. J. Measures, Esq., of Camberwell, before the Royal Horticultural Society on November 14th, 1893.—*Garden hybrid*.

FIG.—*Le Moniteur d'Horticulture*, 1887, p. 54.

C. CASSIOPE, *Rolfe*.—This is the result of a cross effected by Messrs. Seeger & Tropp, of Dulwich, between *C. venustum* and *C. Hookerae*. "The upper sepal has the markings of *C. venustum*, but is relatively broader; the petals narrower, more conspicuously nerved, with from four to six spots only on each, and the light warm brown of the apical portion replaced by a purple similar to that of *C. Hookerae*; cilia as in *C. venustum*; the lip is much larger than in *C. venustum*, the characteristic nervation almost obliterated and the whole more suffused with purple; the margins of the side lobes have also acquired a number of light purple spots, not seen in *C. venustum*. Staminode a little larger, a shade less deeply notched and the markings a little more conspicuous" (R. A. Rolfe in *Gardeners' Chronicle*, 3rd ser., 1889, v. p. 200).—*Garden hybrid*.

C. CASTLEANUM, *Rolfe*.—"A hybrid raised from *C. hirsutissimum*, Rchb. f., crossed with the pollen of *C. superbiens*, Rchb. f., and quite intermediate in character. The leaves are light glaucous-green with darker reticulated veins, 6 to 8 inches long by $1\frac{1}{2}$ inch broad; dorsal sepal ovate, obtuse, $1\frac{1}{4}$ inch long by $1\frac{1}{2}$ inch broad, light maroon-purple, with darker nerves, a white margin, and a few minute black dots at base; petals widely spreading, $2\frac{1}{4}$ inches long, linear-oblong, ciliate, light green at base, passing into maroon-purple towards apex, with numerous dark brown spots on basal half; lip a little compressed at sides, nearly 2 inches long, dull maroon-purple in front, paler behind, the infolded side lobes with numerous small maroon spots; staminode with broad rounded base and three blunt, short teeth at apex, palest green with slightly darker reticulated nerves, purplish on basal half" (R. A. Rolfe, *Reichenbachia*, 2nd ser., i. t. 45).—*Garden hybrid*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 45; *Journ. of Hort.*, 1891, xxii. p. 101, f. 19.

C. CAUDATUM, *Lindley*.—This is one of the most remarkable of Orchids, owing to its singularity of character and appearance, and has no doubt created a greater sensation than any other member of its genus. The plant is a stemless evergreen, the ensiform distichous leaves are of a light green colour, and the flower scapes, which rise from the centre of the plant, and are produced after the leaf growth is completed, grow from 1 foot to 18 inches high. The sepals and petals are yellowish, marked with brown, the long tail-like



CYPRIPEDIUM CAUDATUM.

(From the *Gardeners' Chronicle*.)

petals, which are the most extraordinary part of the plant, often reaching, when fully developed, to the length of 30 inches, and being more deeply coloured towards the end; the lip is of a reddish-brown, with the basal part yellow, beautifully spotted with reddish-brown. The plant blooms during the months

of April and May, and lasts in perfection for several weeks if the flowers are kept from damp.—*Chiriqui, Peru.*

FIG.—*Part. Fl. Gard.*, i. t. 9; *Warner, Sel. Orch. Pl.*, ii. t. 1; *Hook. Ic. Pl.*, vii; tt. 658, 659; *Gard. Chron.*, N.S., iii. p. 211, f. 40 (specimen); *L'Orchidophile*, 1887, p. 181; *The Garden*, iii. p. 313, with fig.; *Flore des Serres*, t. 566; *Pescatorea*, t. 24; *Veitch's Man. Orch. Pl.*, iv. p. 60.

SYN.—*Selenipedium caudatum*.

C. CAUDATUM ALBUM.—See C. WALLISII.

C. CAUDATUM, Luxembourg Variety.—In this form the leaves are stouter, longer, and much more erect than in the type. The flowers, according to M. Godefroy, "are far from being as handsome as *C. caudatum Warscewiczii*." We have not seen the flowers, but having seen the original plant in the Luxembourg Gardens, Paris, we can vouch for the habit of growth being as described.

FIG.—*Journ. of Hort.*, 1892, xxv. p. 171, f. 25; *Gard. Mag.*, 1892, p. 489 (woodcut).

C. CAUDATUM ROSEUM, Hort.—A variety which grows in the same way as the type, and blossoms at the same time, but the flowers are of a dark rose, intermixed with the yellow and green. It has all the beauty of the species, with additional charms, especially brilliancy of colour; it is identical with *C. Warscewiczianum*. It was discovered by Warscewicz in the mountains of Chiriqui. It is stated by Mr. R. Pfau, in the *Gardeners' Chronicle*, to grow exclusively on the tops of trees at the height of 60 to 100 feet from the ground.—*Chiriqui*.

FIG.—*L'III. Hort.*, 1886, xxiii. t. 596; *L'Orchidophile*, 1887, p. 337.

SYN.—*C. caudatum Warscewiczii*; *C. Warscewiczianum*; *Selenipedium caudatum roseum*.

C. CELEUS, Hort.—A cross between *C. insigne punctatum violaceum* and *C. villosum*, raised by R. J. Measures, Esq., of Camberwell, and exhibited by him at the meeting of the Royal Horticultural Society on November 14th, 1893. The dorsal sepal is a pale delicate green covered with large purple spots, suggesting its seed parent; the white border is sharply defined. Petals greenish-yellow, wholly covered with pale purplish-brown reticulations, leaving but little of the ground colour visible.—*Garden hybrid*.

C. "CELIA," Rolfe.—This handsome hybrid was raised by Mr. Savage, gardener to W. S. Kimball, Esq., of Rochester, N.Y., and is believed to be a cross between *C. Spicerianum* and *C. tonsum*. It is named after Mr. Kimball's daughter. "Leaf linear-oblong, acute, light green, irregularly tessellated with dark green; dorsal sepal sub-orbicular, over 1½ inch broad, white, with numerous light green nerves on the basal half, and a narrow purple median band; petals linear-oblong, over 2 inches long, a little ciliate, light green, nearly white towards apex, with a narrow purple median band and about seven lines of small dusky-purple spots; lip 2 inches long, purple-brown in front, paler behind, infolded side-lobes with numerous purple-brown spots on a pale ground; staminode obcordate-reniform, the two apical teeth very broad and rounded, purple, with white margin and green reticulations in the centre" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 104).—*Garden hybrid*.

✓ **C. CERES**, *N. E. Brown*.—A hybrid obtained by Mr. J. Keeling, gardener to Drewitt O. Drewitt, Esq., of Riding Mill-on-Tyne. It is the result of a cross between *C. Spicerianum* and *C. hirsutissimum*. "The leaves are intermediate in breadth between the two parents, moderately dark green with very faint traces of darker irregular transverse bars, and scarcely shining, the underside is dull green clouded with purple at the very base; the scape is purple-brown and hairy; upper sepal similar to that of *C. Spicerianum* in shape, but not arching forward quite so much; the base is green, densely dusted with purple-brown; the upper two-thirds is white, faintly tinged with rosy purple, and dotted in the lower part, especially on the nerves, with bright dark purple, and with a broad middle line of the same colour; the back is rosy-purple, with rather darker nerves, and a moderately broad white border; the lower sepal is oblong-ovate, and similar to that of *C. hirsutissimum*, but flatter, with recurving margins; pale green, with two purple-brown nerves on the inner face; both sepals are pubescent; the petals are almost identical with those of *C. hirsutissimum*, in form and colour; the lip is also like that of *C. hirsutissimum*, but rather broader, and the sides of the basal part are not inflexed so much, but are more so as in *C. Spicerianum*; the colour is brownish around the mouth, shading into purple at the apex; the staminode is quadrate and slightly undulate, but much less so than in *C. Spicerianum*, bright purple, with a whitish centre and narrow whitish border; it is shining and has a few hairs at the base" (*N. E. Brown*, in *Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 360).—*Garden hybrid*.

C. CHAMBERLAINIANUM, *O'Brien*.—A beautiful and distinct novelty introduced in 1892 by Messrs. Sander & Co., of St. Albans. It appears to be quite different from every other section of *Cypripedium*, and comes from a hitherto unexplored district in New Guinea. "The plant is robust, and resembles a giant of *C. Spicerianum*, or it might easily be taken for a large *Angraecum pellucidum*, so distinct is its growth from that of any other species. From the evidence of the dried spikes sent over by the collector, and those which opened immediately after their arrival, it is seen that native specimens have spikes showing from twelve to twenty or even more flowers [flower seats?] on a spike, each flower springing from a stout and ornamental bract. The flowers themselves may be likened in colour to those of *C. superbiens* or *C. Morganiae*, but in their botanical features there is nothing to compare them with; the dorsal sepal is yellowish-white, with six rosy-purple lines, three on each side of the mid-rib, and the base of the sepal has a profusion of rosy-purple spots; the lower sepal is similar to the upper, but smaller; and a very peculiar feature in both is, that they are strongly pubescent or hairy on the backs; the petals are spreading, curled and twisted, and beautifully spotted with crimson, the margins undulated, and furnished with white hairs at the edges; the labellum or pouch is white, beautifully and densely spotted with rose colour on the lower portion; altogether it is a charming plant, and well worthy to bear the name of the Right Hon. Joseph Chamberlain, M.P., to whom Messrs. Sander have requested it to be dedicated" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 234).—*New Guinea*.

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 294, f. 49; *Gard. Chron.*, 3rd ser., 1892, xi. p. 241, f. 34; *Revue Hort.*, 1892, p. 104, f. 27, p. 105, f. 28; *Id.*, 1893, p. 141 (plate); *The Garden*, 1893, xliii. p. 304; *Revue Hort. Belge*, 1893, p. 142.

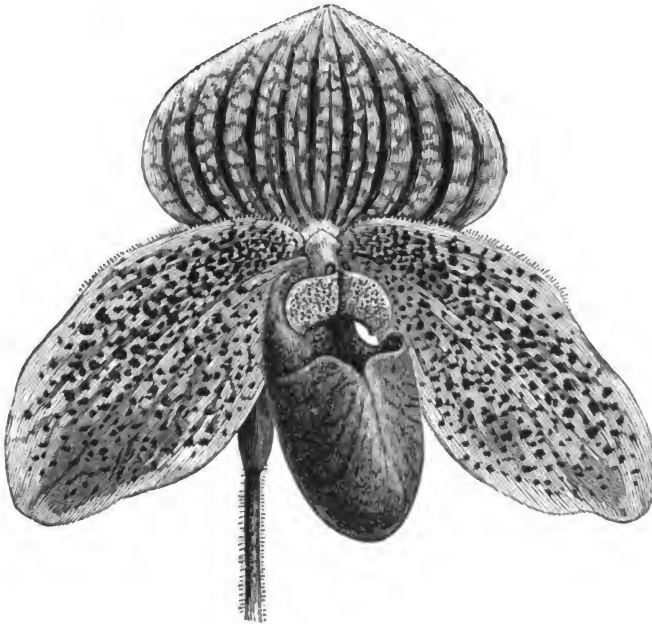
C. "CHARLES CANHAM," Rolfe.—A cross between *C. villosum* and *C. superbiens*, with large flowers and short scapes; dorsal sepal whitish, darkish purple towards the centre, striped longitudinally with purple at the base, and with greenish towards the apex; petals ciliate, deep purple towards the centre, passing into yellowish-brown, furnished with several purple spots; lip brownish-purple.—*Garden hybrid*.

SYN.—*C. Canhami*.

C. "CHARLES GONDOIN,"—A cross between *C. insigne punctatum violaceum* and *C. vernizium*; dorsal sepal broad as in *C. insigne*, yellow in the centre, margined with white, spotted after the style of the first-named parent, but more irregularly; petals veined and spotted with purplish-brown; lip similar in shape to *C. insigne*, brown. Raised by the late M. Jolibois, of Paris.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1892, p. 337.

C. "CHARLES RICHMAN," Hort.—This fine hybrid is a cross between *C. bellatulum* and *C. barbatum*, and was exhibited by Mr. C. Richman, gardener to



CYPRIPEDIUM "CHARLES RICHMAN."

(From the *Journal of Horticulture*.)

G. H. Palmer, Esq., of Springfield, Trowbridge, on May 9th 1893, before the Royal Horticultural Society. A glance at our illustration will give a good idea of the size and contour of the flower; the dorsal sepal is whitish veined and striped

with deep rosy purple; the petals are similar in colour and furnished all over their surface with small dark purple spots; the lip is dark purple brown.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvi. p. 517. f. 92.

C. CHARLESWORTHII, *Rehbe.*—A beautiful and striking novelty which was exhibited before the Royal Horticultural Society, on September 26th, 1893, by Messrs. Charlesworth, Shuttleworth & Co. In habit of growth it resembles *C. Spicerianum*; the broad dorsal sepal is flat, $2\frac{1}{2}$ inches wide, white, veined with light rosy-purple; lower sepal about 1 inch broad, greenish-white; petals $1\frac{1}{2}$ inch long; yellowish tinged with brown; pouch not unlike that of *C. insigne*, also yellow tinged with brown; the prominent staminode is pure white, with a spur in the centre.—*East Indies*.

FIG.—*Journ. of Hort.*, 1893, xxvii., p. 307, f. 43; *Gard. Chron.*, 3rd ser., 1893, xiv., p. 457, f. 70; *Orchid Review*, i. frontispiece; *Gard. Mag.*, 1893, p. 750 (woodcut).

C. CHLORONEURUM, *Rehb. f.*—A very distinct and free-growing hybrid, raised by R. Warner, Esq., of Broomfield, Chelmsford. It has beautifully variegated foliage, and the flowers are large and well expanded, the dorsal sepal of a bright lively pale green colour reticulately veined with darker green and bordered with white; the oblong petals are also green suffused on the distal upper half with purple, and furnished with a few black marginal warts near the base; and the lip is large, heavily stained with wine-purple and freely marked with reticulations of a darker purple. It flowers during December, January, and February.—*Garden hybrid*.

FIG.—*Orchid Album*, i. t. 37.

C. CILIOLARE, *Rehb. f.*—A distinct and handsome species, having foliage in the way of *C. Argus* and flowers similar to those of *C. superbiens*, but it is not so handsome as that species. The dorsal sepal is smaller and curved forward, and is traversed longitudinally with green veins on a white ground suffused with purple; the petals are purplish, and densely spotted with black on the lower halves; and the lip is dull purple, and covered with a sort of down. The hairs on the margins of the sepals and petals are more numerous and denser than in *C. superbiens*. It blossoms in April and May.—*Malay Archipelago*.

FIG.—*Godefroy's Les Cypripédiées*, part i.

C. CILIOLARE MITEAUANUM, *Lind. et Rod.*—A handsome variety which differs from the type by having larger flowers of a brighter colour and being more hairy. It has been named after M. Gustave Miteau, of Jette-Saint-Pierre, near Brussels.

FIG.—*Lindenia*, iv. t. 146.

C. CLAPTONENSE, *Rehb. f.*—This hybrid was raised by Messrs. H. Low & Co. One of its parents was *C. Harrisonianum*, but the other is not known, but believed to be *C. villosum*. The dorsal sepal is rather narrow, bright green at the base, white in the upper part, with small dark purple spots arranged in rows; the petals are strap-shaped, widest at the extremities, of an ochre-yellow colour, with a brown median line; the upper halves are marked transversely with brown between the nerves.—*Garden hybrid*.

C. CLARKEI.—See *C. INSIGNE CLARKEI*.

C. CLEOPATRA, *O'Brien*.—This novelty has been raised by Chas. Winn, Esq., of Selly Hill, Birmingham, and is a cross between *C. Hookerae* and *C. oenanthum superbum*. "*C. Cleopatra* greatly resembles *C. Hookerae*, but it has larger flowers, in which the influence of the handsome *C. oenanthum superbum* is at once remarked in the lurid glow of the purplish-crimson colouring on the upper portion of the dorsal sepal and the outer halves of the petals. The dorsal sepal has green radiating lines from the base upwards, which change their hue as they pass into the bright purplish-crimson of the upper half, which itself gets lighter as it approaches the narrow white margin. The lower sepal is greenish-white, tinged with rose; the petals are greenish at the base and bright purplish-crimson at the tips, and on the upper and lower margins are a few chocolate warts; the petals are ciliate, and there are a few scattered hairs on their surface at the base; the lip is yellowish-green, tinged on the face and sides with purple, and with numerous purple dots on the infolded lobes; the staminode is of a yellowish colour, tinged with rose, and marked with green in the centre" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1892, xi., p. 458).—*Garden hybrid*.

C. CLINKABERRYANUM, *O'Brien*.—A cross between *C. Roebellini* and *C. Curtisii*, which was raised "by Messrs. Pitcher & Manda, the American



CYPRIPEDIUM CLINKABERRYANUM.

(From the *Gardeners' Chronicle*.)

nurserymen, and acquired by that enthusiastic orchidist, the Hon. Chas. G. Roebling, of Trenton, N.J., U.S.A., who is known the world over as the builder of that marvellous structure, the Brooklyn Suspension Bridge, and other triumphs of engineering skill. The variety was named by request in honour of his gardener, Mr. Clinkaberry, whose fame as an Orchid grower is as well known here as in the States. A fresh flower received furnished material for the following description:—Scape hairy, tinged with rose; ovary reddish on the ribs, green between; upper sepal white, with about twenty well-defined purple lines reaching to the upper margin, $2\frac{1}{2}$ inches long, $1\frac{1}{2}$ inch broad; lower sepals together rather smaller than the upper, greenish-white, with a few faint reddish lines; staminode nearly orbicular, with a notch or depression in the upper

edge; petals 4 inches long by $\frac{1}{2}$ inch broad, creamy-white, spotted over the entire surface with purplish-crimson. The labellum is large, and partakes

much of *C. Curtisii*, especially in the narrow infolded side lobes and the general helmet-shaped contour, whitish, tinged with dull rose, the darkest portion being the face."—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiv. p. 86, f. 18.

C. CLONIUS, *Veitch*.—A lovely hybrid raised by Messrs. Veitch, between *Uropedium Lindenii* and *C. conchiferum*, and exhibited by them before the Royal Horticultural Society on October 24th, 1893, when it was awarded a 1st Class Certificate. The dorsal sepal is ovate acuminate, pale yellow, veined with greenish yellow; petals about 9 inches long, very narrow, of a pale yellow, veined with a delicate pale green; lip ivory white, suffused and faintly veined with pale rose, the incurved portion spotted with brown-purple.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvii. p. 395, f. 58.

C. CONCHIFERUM, *Rehb. f.*—According to Professor Reichenbach this plant has the appearance of a giant *C. caricinum*, with some attributes of *C. Roezlii* as to colour, breadth of petals, leaves, and extension of bracts. The flower has an oblong triangular dorsal sepal, whitish, veined with pale yellowish green; the petals are ribbon-like, twisted, narrow, white veined with green at the base, brownish crimson towards the tips; and the lip is of a pale olive-green, with the inflexed side lobes spotted and freckled with brown, and covered at the top with shining green warts. This is the result of a cross between *C. caricinum* and *C. Roezlii*, and was raised by J. C. Bowring, Esq., Windsor Forest.—*Garden hybrid*.

SYN.—*Selenipedium conchiferum*.

C. CONCOLOR, *Parish MS.*—A very distinctly marked plant of the stemless section. The leaves are leathery, oblong obtuse, beautifully variegated above and reddish-purple beneath. The scape is short, pubescent, purple, usually two-flowered, the flowers cream-coloured and finely speckled with minute crimson dots. The sepals and petals are broad, and the lip comparatively small. We have seen this plant as imported, and from its appearance should judge that it grows naturally among limestone rocks. We therefore recommend some of that material to be mixed with the peat and sand used for potting.—*Moulmein*.

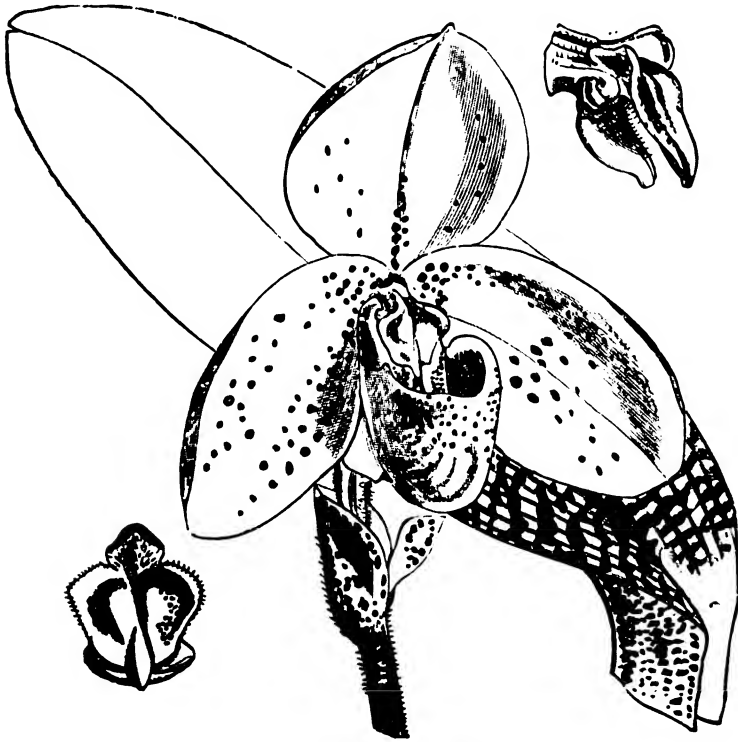
FIG.—*Bot. Mag.*, t. 5513; *Batem, Second Cent. Orch. Pl.*, t. 153; *L'Illust. Hort.*, t. 444; *Gard. Chron.*, 1865, p. 626, with f.; *Id.*, N.S., xix. p. 19, f. 3, back figure; *Flore des Serres*, t. 2321; *Florist and Pomologist*, 1870, p. 149, with f.; *Revue Hort. Belge*, 1886, p. 241; *Orchid Album*, vii. t. 302; *Veitch's Man Orch. Pl.*, iv. p. 17; *Gard. Chron.*, 3rd ser., 1891, ix. p. 501, f. 101.

C. CONCOLOR CHLOROPHYLLUM, *Rehb. f.*—A form in which the colour of the leaves is paler, and the purple is almost absent, being pale green; the flowers are also characterised by a row of purple spots along the middle of the sepals and petals.

C. CONCOLOR REGNIERI, *Rehb. f.*—In this form the leaves are longer and narrower than those of the type, and the tessellations are not so distinctly marked; scape 3–5 flowered, and the flowers are much deeper yellow. Introduced by M. Regnier, of Fontenay-sous-Bois.—*Cambodia*.

C. CONCOLOR STRIATUM, *O'Brien*.—This variety differs in having narrower petals than the type, but especially in both sepals and petals having a purple median line, with three or four smaller lines on each side.

C. CONCOLOR SULPHURINUM, *Rehb. f.*—"This is stated to be green-leaved. It is a lovely elegant variety, with light sulphur-coloured flowers, without the least trace of a spot; there are only two darker yellow eyes on the disk of the triangular heart-shaped, very acute, staminode; the petals are bent down with much elegance" (*H. G. Reichenbach, in Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 264).



CYPRIPEDIUM CONCOLOR.
(From the *Gardeners' Chronicle*.)

C. CONCOLOR TONQUINENSE, *Hort.*—In this variety the leaves are broader than those of the type, and the dorsal sepal and the petals also are broader, and the spotting is more confined to the basal parts.—*Tongkin*.

FIG.—*Lindenia*, ii. t. 77 (*C. tonkinense*); *L'Orchidophile*, 1886, p. 226.

SYN.—*C. tonkinense*.

C. CONCO-LAWRE, *Lawrence*.—This handsome hybrid is one of the many good things raised by Sir Trevor Lawrence, Bart., and was obtained by crossing *C. concolor* with *C. Lawrenceanum*. The leaves resemble those of the last-named

parent; the dorsal sepal measures nearly 2 inches in breadth and 2 inches in height, and is of a very delicate shade of pale rosy-purple, veined and more or less reticulated with rich vinous purple, with a delicate shade of yellow at the top extending down the middle almost to the base, where the faint green is hardly visible, numerous minute purplish dots covering the basal region; petals nearly $2\frac{1}{2}$ inches long, and nearly 1 inch broad, of a delicate yellow, which passes into a vinous rosy-purple at the tips and margins, veined with the same shade of purple, and covered by numerous small spots of blackish-purple mostly disposed in lines along the nerves; the basal parts in the upper halves of a yellowish-green; pouch yellow, suffused and veined with rosy-purple; scape sometimes two-flowered; staminode large, yellowish-green, suffused and margined with pale rosy-purple.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvi. p. 193, f. 41; *Orchid Album*, xi. t.

C. CONSPICUUM, *Rchb. f.*—The parentage and origin of this hybrid are unknown, the plant having been purchased at a sale by Mr. R. H. Measures. The dorsal sepal is "broad, elliptic, acute, light green bordered with white, with fifteen to seventeen dark blackish nerves, which run nearly to the margin, and which are very conspicuous; the inferior connate sepal is much narrower, oblong, acute, very light green, with thirteen light green nerves; petals ligulate, broader towards the top, blunt, acute, (?) ciliate on the upper margin, with dark mid-lines, superior part almost black at the base, then chestnut, verging to reddish-ochre at the tip; the lip is nearly like that of *C. villosum*, but much larger, with much shorter horns, brown in front, ochre-coloured underneath" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1838, iii. p. 521).—*Garden hybrid*.

C. "CONSTANCE," *N. E. Brown*.—"A pale-coloured hybrid, between *C. Curtisii* (male) and *C. Stonei* (female). The leaves are a foot or more long, and about 2 inches broad, green, with the nerves and irregular bars formed by the cross-veins of a darker green, but the mottling is not very pronounced; both sepals ovate-acute, with recurving sides, milk-white, tinged with pale purple, and with slender purple nerves on the face, the back being of a somewhat ochreous colour, suffused with purple, and with purple nerves, slightly shining, and minutely pubescent; the petals are 3 to $3\frac{1}{2}$ inches long, and nearly $\frac{1}{2}$ inch broad; falcate, acuminate, slightly twisted, of a delicate pale yellowish, covered, except just at the base on the lower side, with very numerous small purple-brown spots that show through on the back, both margins ciliate, with dark purple-brown hairs; the lip is very like that of *C. Stonei* in shape, with the margin of the mouth nearly truncate and scarcely grooved beneath, pale purple, the narrow inflexed sides being cream-coloured, with a few light purple spots" (N. E. Brown, in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 294).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1890, xxi. p. 353, f. 46.

C. CORNINGIANUM.—See *C. YOUNGIANUM*.

C. COWLEYANUM, *O'Brien*.—This, according to Mr. Jas. O'Brien, is a very handsome hybrid, and was raised in the gardens of F. G. Tautz, Esq., of Ealing, by Mr. John C. Cowley, his gardener. It is the result of a cross between

C. Curtisii and *C. nircum*. "The foliage is fairly intermediate between the two named, that is to say, in strength and general appearance it approaches *C. Curtisii*, but the foliage is thicker, the markings obscurer, and a tinge of purple shows on the other side; the scape is covered with hairs, brownish in colour the bract (like all the segments of the flower) is also ciliolate, and possesses some purplish spots; and the ovary is of a green colour, tinged with brown; the flowers, in their massive proportions, bear much resemblance to those of *C. Curtisii*, but the petals are wider, and the colouring is different; in fact, the shape of the flower and the spotting have a greater resemblance to *C. Marshallianum* which flowered some time ago with Mr. Tautz, but the ground is white, and the spots are darker and more closely set together than in *C. Marshallianum*. The reverse side of the flower is wholly white, with a slight tinge of green on the middle of each segment; the purplish spotting of the petals showing through at the edges. Regarding the front of the flower, the upper sepal, which is white, and is slightly concave in form, with about fifteen clear dark purplish-crimson lines, more or less dotted, and tinged with rosy purple between them, radiating from the base almost to the edge, so as to leave only a narrow white margin wholly unspotted or tinged; the petals, which are not so much deflected as in *C. Curtisii*, are ovate-oblong, their tips curving slightly backwards; they are white, and almost the whole of their surface is covered with small dark purplish crimson or claret-coloured spots; the base of the petals is tinged with claret colour, which at a little distance gives them a shining purplish-crimson colour; the white ground between the spots is more apparent at the tips of the petals, where about an eighth of an inch in length is white and unspotted; the white lower sepal is furnished with a few purplish lines. The face, sides, infolded lobes, and interior of the lip, are of a bright rosy-purple colour, and the staminode is dark purple, with a white margin on its upper edge (J. O'Brien, in *Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 72).—*Garden hybrid*.

C. CREON, *Hort.*—A hybrid raised by Messrs. J. Veitch & Son, between *C. oenanthum superbum* and a variety of *C. Harrisianum*. The dorsal sepal is rich purple with a white margin; the petals and lip with a purplish tinge.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 205, f. 31.

✓ **C. CROSSIANUM**, *Rchb. f.*—A fine garden hybrid raised by Mr. Cross, of Melchet Court, between *C. insigne* and *C. renatum*. The leaves are oblong, blotched with dark green upon a glaucous ground; the scape is purplish, hairy; the dorsal sepal broadly ovate, white with green lines and numerous blackish dots near the base; the petals are ligulate, brownish copper-coloured, with blackish dots towards the basilar half, and the lip brownish-yellow with greenish veins.—*Garden hybrid*.

C. CRUCIFORME.—See C. LOWII.

C. CURTISII, *Rchb. f.*—A very beautiful acaulescent species, very nearly related to *C. superbiens* and *C. ciliolare*; the lip is, however, much larger than in the latter and has acute side angles; the distichous leaves are broad, oblong acute, recurved, boldly chequered with oblong dark green blotches on a dull green ground; the scape is downy, dull wine-purple, and the flowers large, distinct in character, and showy; the dorsal sepal is short and acuminate, greenish with a

white border, and numerous greenish-purple nerves; the petals are linear oblong, acute, deflexed, recurved at the tips, greenish on the upper, whitish on the



CYPRIPEDIUM CURTISII.

(From the *Gardener's Chronicle*.)

lower halves, indistinctly veined with purple and thickly spotted with small magenta-purple dots, as well as profusely fringed with short blackish hairs;

the spots are smaller than in *C. ciliolare*, but are continued around the apex; the lip has a large oblong bluntly rounded pouch of a dull wine-purple colour with a few darker purple veins. It flowers in June and July. This fine species was discovered by Mr. Curtis.—*Sunda Isles*.

FIG.—*Orchid Album*, iii. t. 122; *Lindenia*, iii. t. 140; *Gard. Chron.*, 3rd ser., 1889, v. p. 629, f. 108; *Id.*, 1890, vii. p. 557, f. 90.

C. CYTHERA, Rolfe.—A diminutive little gem, the result of a cross between *C. Spicerianum* and *C. purpuratum*, raised by R. H. Measures, Esq., of Streatham, and also in our nurseries; it is certainly one of the prettiest as well as one of the smallest in habit, in our collection; the flowers, which are supported on stems about 5 inches in length, have the dorsal sepal white, with lovely green at the base, and in parts delicately suffused or veined with soft purple; the petals, which are long and narrow, are of a bronzy green tint, passing into purplish-brown at the tips, with numerous small purple dots at the base; the staminode is rosy-purple, and the pouch of a deep bronzy-green, with leaves slightly tessellated. It is one of the handsomest little plants we have been successful in raising, and has been greatly admired. Mr. Rolfe mentions the fact that the leaves in the plant from Mr. Measures's collection are quite green, without any trace of tessellation, but in our plants the leaves are decidedly tessellated. Flowers in autumn.—*Garden hybrid*.

C. DAUTHIERI.—*Sec C. HARRISIANUM DAUTHIERI*.

C. DAYANUM, Rehb. f.—A charming plant, the foliage of which is beautifully but sparsely variegated, and very distinct from any other of the variegated class. The flowers, which are large, are produced in May and June, and last a long time in perfection. The sepals are white with close green veins; the petals ligulate, acute, ciliated, purplish tinged with green, and the acute-lobed lip dull purple. This species is not so showy in the blossoms as some others, but the foliage is most beautiful. Two varieties have been flowered by the late John Day, Esq., one having darker foliage than the other, and the flowers also of a darker colour.—*Borneo*.

FIG.—*Fl. des Serres*, t. 1527; *Xenia Orch.*, iii. t. 201; *Id.*, t. 209, f. 3; *Gard. Chron.*, 3rd ser., 1887, i. p. 577, f. 110 (*C. Petri*).

SYN.—*C. Petri*.

C. DELICATUM, Hort.—A neat plant which produces flowers of medium size. The dorsal sepal is white veined with delicate green, rose at the margins; petals pale rose with green veins at the base; the upper margin is furnished with a few blackish wart-like spots, and both margins are ciliate; lip purplish-brown. It was exhibited before the Royal Horticultural Society on October 14th, 1893, by Mr. Lewis, of Southgate.

C. DELICATULUM, Rehb. f.—A fine hybrid obtained by Mr. D. O. Drewett, of Riding Mill-on-Tyne, and is the result of a cross between *C. barbatum Warnerianum* and *C. Dayanum*. "The leaves are those of the last, and the flowers are, of course, exceedingly near those of *C. Swanianum*, which has the same parentage, but inverted. The upper sepal is rather broad, elliptical, apiculate,

with fifteen to sixteen green veins on each side the median veins; the area around the outer veins is washed with purple; the side sepals form a narrow ligulate acute body, with eleven green nerves, nearly as long as the lip, which would be that of *C. barbatum* were it not for its more conical sac; deflexed petals ligulate, dilatate, acute, densely ciliate at the margins, brownish-purple on the anterior part, full of green veins, with a dark purple median nerve on the superior half. There are some rather obscure spots on the base towards the upper sepal; the staminode is transverse, with a short uncinat antrorse tooth at each side, and a dark purple one in the middle; the usual green areolae are to be seen each side of the mid line" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, ii. p. 552).—*Garden hybrid*.

C. DESBOISIANUM, *Hort. Belg.*—A cross between *C. venustum* and *C. Bozallii atratum*. We have not seen this hybrid, but it is described by Signor Angelo Pucci in his work on *Cypripediums*:—"Dorsal sepal yellowish-green, shaded with white, distinctly spotted with black, and slightly bordered with creamy white; petals large, undulated on the superior part, clear yellow, passing to mahogany red, shaded with copper colour; in the superior half olive-yellow, veined with green, and marked with large black spots in the centre and at the base; lip large, elongated, reddish-maroon towards the mouth, olive-green, veined with emerald-green at the extremity, bordered with golden-yellow at the opening; leaves broad, short, strongly spotted with reddish-brown at the base.—*Garden hybrid*.

FIG.—*Lindenia*, vii. t. 277.

C. "DE WITT SMITH," *Rolfe*.—"This is a hybrid, raised in the establishment of Messrs. Hugh Low & Co., of Clapton, from *C. Spicerianum* as the seed parent, and *C. Lowii*. It was exhibited by them at the Show of the Royal Botanic Society on June 19th, 1889, when it was awarded a Botanical Certificate. The leaves are wholly green, narrow, and much resemble those of *C. Lowii*, while the scape, some 15 inches high, bears two flowers which are tolerably intermediate between those of the two parents. The upper sepal is orbicular ovate, the margins a little reflexed near the base, and conduplicate near the sub-acute apex; colour, centre and base pale green, spotted and veined with purple-brown, the broad margin cream-white, with a few traces of light purple, while a narrow purple-brown band extends from base to apex; lower sepal elliptical ovate, pale green; petals $2\frac{1}{4}$ inches long, a little narrowed below, and the upper margin undulate, bright green on lower half, with numerous purple-brown spots passing into light rosy-purple above. Lip dark olive green in front, lighter behind; staminode obcordate, light purple, with a few green markings in the centre, margin not undulate; the vegetative organs show a considerable approach to those of *C. Lowii*, while the elongation of the petals and the shape of the staminode are also derived from the same source; the shape and colour of the upper sepal, with its median purple band, the undulate upper margin of the petals, the numerous small spots, and the colour of the staminode, show an approximation to *C. Spicerianum*. Altogether it is a bright and attractive little plant, and bears the name, by request of Messrs. Hugh Low & Co., of De Witt S. Smith, Esq., of Lee, Mass., U.S.A., who is an ardent admirer of Orchids generally, and especially of the genus *Cypripedium*" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1889, vi. p. 6).

C. DIANA, *Hort.*—This hybrid was obtained in the splendid collection of R. J. Measures, Esq., of Camberwell, and was exhibited by him before the Royal Horticultural Society. It is the results of a cross between *C. barbatum superbum* and *C. Spicerianum*. The dorsal sepal is very broad, white veined with rose-purple, and having a dark purple medium line. In other respects the flowers are much like *C. Lecanum*.—*Garden hybrid*.

C. "DIBDIN," *O'Brien.*—A cross between *C. Argus* and *C. Bozallii*, raised by Mr. Cowley, gardener to F. G. Tautz, Esq., of Dibdin House, Ealing. It is in the way of *C. vernixium*. The dorsal sepal is green, striped with purple, and almost entirely covered with purple spots, except the narrow blush margin; the petals are whitish, and have blackish spots on the upper halves; lip greenish-white, tinged with rose in front.—*Garden hybrid*.

C. DILECTUM, *Rehb. f.*—A natural hybrid, supposed to be from *C. Bozallii* and *C. hirsutissimum*. "The median sepal is narrow, oblong, quite blunt at the top, where there is a short white margin; the light green lamina is covered with rows of irregular spots of a peculiar black, with a hue of Indian purple; the lateral sepals form a narrow oblong light-green body, with some short rows of dark lines and spots at the base; the petals are cuneate, oblong-obovate, and blunt; a dark line of black runs over the middle; the superior part is of a peculiar purple-mauve, excepting near the black line, where it is light green; the base is light green, with numerous black spots; the inferior part is green, with some obscure indigitations of some mauve reticulations; hip rather slender, central portion two-horned, with retuse median border, yellowish-green outside, full of blackish-purple spots inside; staminode narrower than in *C. Bozallii*, trilobed at the apex, mid-lobe roundish retuse, broadest side lobe tooth-like; ovary covered with dense hairs, nearly equal to the light-green bract; peduncle with numerous hairs" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 330).

C. DISCOLOR, *Rehb. f.*—A hybrid of *C. venustum* parentage, which was raised in Mr. R. Warner's collection. The leaves are faintly marbled with green and grey; the dorsal sepal is somewhat triangular, with sixteen dark purple stripes between the green nerves, white in the upper part; petals ligulate, of a vinous red, yellowish at the base, with some greenish nerves, a deep crimson-purple median line, extending from base to tip, numerous dark purple-brown spots near the base on the upper half, and a few minute spots of the same colour on the lower half, the edges ciliate near the base; lip long, pallid reddish-brown, light green at the base; the whole pouch beautifully veined.—*Garden hybrid*.

C. DOLIARE, *Rehb. f.*—"It is very near *C. plunierum*. It is distinct by the leaves having very narrow dark bars, by the petals having no large black spots at all on the border, but simply green at the base, brownish-purple in front, and with very numerous point-like little dots at the base, well ciliate on the borders, by the staminodium being dark brown with a lighter border; the cinnamon-brown lip is shining, very large, and suggested to me the idea of a cask. The parentage is obscure, and I should not wonder if it came even

out of the same seed-pod as *C. plumerum*. If we continue to obtain hybrids of uncertain parentage, we may, botanically speaking, sink down to a very deep level" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 447).

✓ **C. DOMINIANUM**, *Rehb. f.*—This is one of the many startling results of hybridising realised by the late Mr. Dominy, whose name it worthily bears; it seems exactly intermediate between its parents, *C. caricinum* and *C. caudatum*. The leaves are linear-elongate, broader than in *C. caricinum*, and the flower stems are erect, bearing three flowers at one time; these are of yellowish-green tinged with coppery-brown, the lip deep reddish-brown in front with darker reticulations, yellowish-green behind, the incurved mouth also yellowish with many dark purple dots in groups. In shape the flowers resemble those of *C. caricinum*, whilst in size they are intermediate. It is a valuable addition to this fine genus.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 499; *Veitch, Cat.*, 1873, p. 12, with fig.; *Florist and Pomol.*, 1874, 57, with fig.; *The Garden*, iii. p. 491, with fig., 1891, xxxix. p. 412; *L'Orchidophile*, 1882, p. 452; *Veitch's Man. Orch. Pl.*, iv. p. 103.

SYN.—*Selenipedium Dominianum*.

✓ **C. DORIS**, *Rolfe*.—"Leaf ligulate-oblong, greyish-green above, and sparingly variegated with irregular transverse lines and blotches of dark green, pale green below, with numerous obscure purple markings; scape one-flowered, pubescent; bract not half equalling ovary; dorsal sepal ovate, acute, pale greenish-white, with about twenty-one light green veins; lower sepal smaller, and with fewer veins; similar in colour; petals ligulate-oblong, slightly broader towards apex, sub-obtuse, almost 3 inches long, pale greenish-white, with about eleven light green veins below, passing into light purple-brown towards apex, and with numerous large dark brown blotches, except at extreme base and apex; lip much like *C. renustum* in shape, light purple-brown in front and sides, and veined with olive-green, paler behind and near base, with brighter green nerves; infolded sides yellowish, with a few small light brown warts; staminode with nearly circular outline, bi-cuspidate above, pale yellowish-green with dusky-purple reticulations in centre; derived from *Cypripedium renustum* and *C. Stonei*" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 716).—*Garden hybrid*.

✓ **C. DRURYI**, *Beddome*.—A most distinct and desirable species of the stemless group, having stout ligulate acute leaves about 9 inches in length and $1\frac{1}{2}$ inch in breadth. The flowers are produced singly on an erect brownish hairy scape; the dorsal sepal is greenish-yellow, covered on the outside with dark glandular hairs, and having a purplish-brown stripe down its centre; the petals are broad, ligulate, bent somewhat downwards, greenish-yellow, and like the dorsal sepal having a purplish-brown central stripe, marked also with small dark spots near the base; and the lip is pale yellow with numerous brown spots on its channelled base. It was introduced by Colonel H. Drury, and flowers during May and June.—*India: South Travancore Mountains*.

FIG.—*Brdd. Icon. Pl. Or.*, t. 112; *L'Ill. Hort.*, 3rd ser., t. 235; *Floral Mag.*, 2nd ser., t. 425; *Lindenia*, i. t. 6; *Veitch's Man. Orch. Pl.*, iv. p. 22.



CYPRIPEDIUM DOMINIANUM.
(From Messrs. J. Veitch & Sons' Catalogue.)

C. ELECTRA, *Rolfe*.—The origin of this hybrid is doubtful, but it is presumed to be the result of a cross between *C. Harrinianum* and *C. insignis*, or one of its varieties. It was raised in the Nurseries of Messrs. J. Veitch & Sons. The dorsal sepal has a broad white border, and the spots are almost confluent in lines, on a bright green ground; petals varnished, veined and reticulated with purple-brown on a paler ground and with a few small dark spots on the inner half near the base; lip shining purple-brown" (*R. A. Rolfe*, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 297).—*Garden hybrid*.

C. "ELINOR," *N. E. Brown*.—A cross between *C. selligerum majus* and *C. superbiens*, the latter being the pollen plant. "Leaf oblong, acute, and three-toothed at the apex, and growing to 1 foot in length by 3 inches in breadth; the upper surface is bright green, with dark green nerves and cross veins, the latter more or less grouped in irregular bands; under surface uniform greyish-green; peduncle stout, brownish-purple, hairy, about 1 foot long; bract about 1 inch long, acute, light green, rather shorter than the pedicel of the ovary, which is light green, with darker ribs, and hairy; upper sepal orbicular, acute, nearly 2 inches broad, white, faintly tinted with green in the centre, yellowish-green at the base, with numerous ochre-green nerves, slightly tinted with purple-brown; lower sepal ovate, white, with green nerves; petals $3\frac{1}{4}$ inches long, in shape like those of *C. selligerum majus*, but broader, more drooping, and somewhat curved back, purplish, with a whitish area under the mid-line at the base; the nerves purplish or brownish, the mid-line and upper margin with a dark olive hue spread over them, the basal part above the mid-line for nearly halfway to the apex is rather densely marked with blackish-purple spots, and the upper margin for about four-fifths of its length is marked with wart-spots of the same colour, and there are some similar wart-like spots at the middle of the lower margin; the lower nerves at the basal part are marked with small purple-brown spots; the base is light green, and both margins are ciliate, with blackish-purple hairs nearly or quite to the apex; the lip is 2 inches long, and like that of *C. selligerum* in shape; the inflexed sides are shining purple, with darker spots, and the pubescent toe part dark brownish-purple, shading into greenish at the apex; staminode transverse reniform, three-toothed in front, ochreous reticulated all over with green, pubescent. From the above it will be seen that this novelty is more like the seed-parent than its male progenitor, but differs markedly in the pale colour of the upper sepal, and the more drooping and more densely spotted petals." (*N. E. Brown*, in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 38).—*Garden hybrid*.

C. ELLIOTTIANUM, *O'Brien*.—Leaves distichous, ligulate obtuse, from a foot to 15 inches long, bright green on the upper side, paler beneath; scape erect, furnished with numerous large bracts, which are white tinged with green, and streaked with lines of deep chocolate, bearing towards the apex from two to five large and showy flowers; dorsal sepal large, ovate acuminate, ivory-white, suffused with yellow, profusely streaked with broad lines of deep brownish-purple, lower sepal smaller, but similar in colour and markings; petals long, ciliolate on the edges, gradually tapering to a point, white, flushed with yellow at the base, and spotted with brownish-purple, and this colour is continued in lines throughout the entire length; lip large, projecting forward, contracted at the base, ivory-white, suffused with brownish-purple, and veined

with a deeper shade of the same hue; staminode large, beak-like incurved, furnished with numerous short hairs near the apex. It appears to be closely allied to *C. Rothschildianum*, and is considered by some to be only a variety of that species.—*Philippine Islands*.

FIG.—*Lindenia*, iv. t. 186; *Orchid Album*, ix. t. 397; *Journ. of Hort.*, 1890, xx. p. 199, f. 28.

C. ENFIELDENSE, *Hort.*—This hybrid was obtained in the collection of A. J. Hollington, Esq., of Forty Hill, Enfield, and is the result of a cross between *C. Hookeræ* and *C. Lawrenceanum*. Leaves similar to those of *C. Lawrenceanum*; flowers borne on very long stalks; the dorsal sepal is greenish-yellow near the base, covered with numerous veins, green at the base and purple at the extremities; the upper part white, suffused with light rosy-purple; petals green at the base, suffused and veined with purplish-brown; the extremities a beautiful and rich rosy-purple, which also runs along the margins near to the base. A few large wart-like deep purple spots near the upper margin, and a few smaller ones of irregular shape near the lower margin; the pouch is of a rich purplish-bronze in front, green at the back.—*Garden hybrid*.

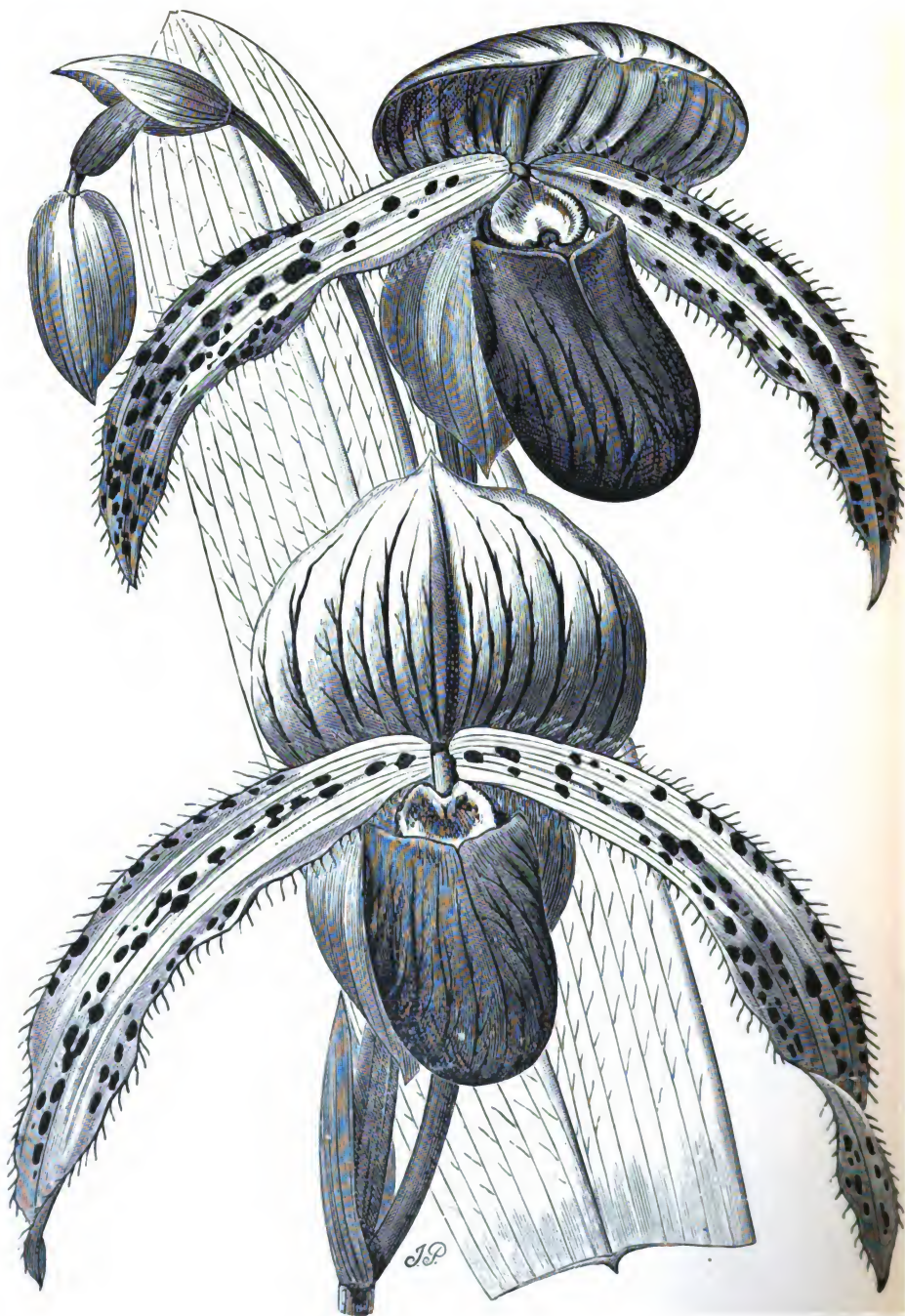
C. ENGELHARDTÆ.—See *C. LEEANUM ENGELHARDTÆ*.

C. "ENSIGN," *O'Brien*.—This is a cross between *C. Harrisianum* and *C. barbatum biflorum*. "A second crossing with a form of *C. barbatum* has of course resulted in producing a flower of smaller size than that of *C. Harrisianum*, and with more of the aspect of *C. barbatum*, but it may only be likened to a small form of that known in collections already as *C. Harrisianum viricans* and it is probable that the cross may have been effected before, but the raisers have included it with *C. Harrisianum*, of which there are a large number of varieties already. The present variety, however, is a neat flower, with a more shiny surface and a more rosy hue over the petals and dorsal sepal than the varieties of true *Harrisianum* have. It was raised and flowered in the gardens of Chas. Winn, Esq., Selly Hill, near Birmingham, where there are many better hybrids approaching maturity" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 73).—*Garden hybrid*.

C. ERNESTIANUM, *Hort.*—We have not seen this plant, but it is said to have been introduced from Borneo by Messrs. Shuttleworth Carder & Co., and was first flowered in February, 1887, in the collection of R. J. Measures, Esq., of Camberwell, and it is named in honour of his son Mr. Ernest Measures. It appears to be closely allied to *C. Dayanum*. Dorsal sepal white veined with green; petals green at the base veined with crimson, white at the tips and furnished with purple hairs on the margins; lip elongate, green marbled with yellowish-brown.—*Borneo*.

FIG.—*Journ. of Hort.*, 1887, xiv. p. 375, f. 67.

C. EUCHARIS, *Desbois*.—This hybrid was raised by Mr. C. Vuylsteke, of Loochristi, near Ghent. "It is a cross between *C. insigne punctatum violaceum* and *C. Lawrenceanum*. Dorsal sepal very fine, the centre clear yellow, speckled with brown, lightened with violet and distinctly bordered with white; inferior sepal greenish-white veined with clear green; pendent petals reddish mahogany-brown, marked with two little ridges upon each petal; lip reddish-crimson;



CYPRIPEDIUM EURYANDRUM.
(From Messrs. J. Veitch & Sons' Catalogue.)

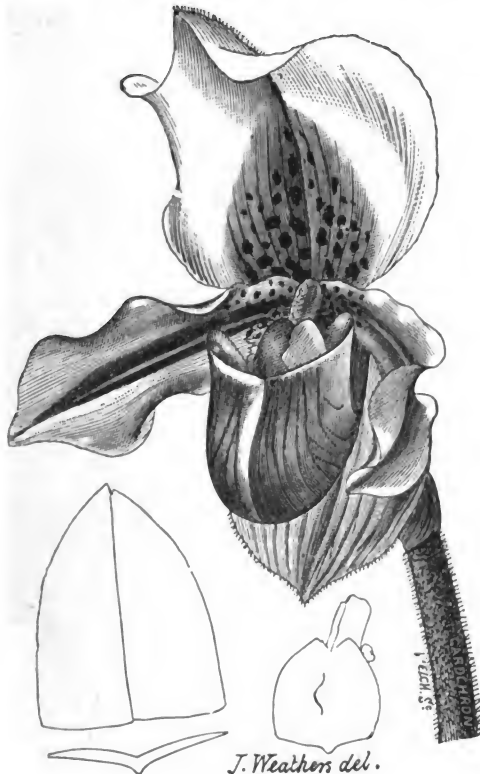
staminode amber, with light hieroglyphic markings, green in the centre; foliage fine, ground colour clear green, much mottled with dark blackish-green" (F. Desbois, in *Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 195).

C. EURYALE, Veitch.—A cross between *C. Lawrenceanum* and *C. superbiens*. "Leaves handsomely tessellated, upper sepal white with a faint flush of pale purple towards the lateral margins, veins green; lower sepal white with pale green veins; petals but slightly deflexed, green with deeper veins, purplish at the tips, and with interrupted lines of blackish warts along the mid-vein and both margins, the latter being hairy; lip purplish-brown, greenish beneath" (Veitch's *Manual of Orchidaceous Plants*, iv. p. 83).—*Garden hybrid*.

SYN.—*C. Verraeianum*.

C. EURYANDRUM, Rehb. f.—A very distinct hybrid between *C. Stonei* and *C. barbatum*. The plant is of a robust habit of growth, and has deep green faintly tessellated ligulate leaves, unequally acute at the apex. The flower scapes are stout and hairy, bearing from two to three flowers, of which the dorsal sepal is very broad, roundish and convex, white stained with crimson and striped with deep crimson-purple and green, and the broadly ligulate ciliate petals are much longer than those of *C. barbatum*, whipish at the base, with many large purplish spots throughout, mostly ranged in lines; the lip is like that of *C. barbatum*, but much larger, brownish-crimson. It was raised by Mr. Seden, in Messrs. Veitch's nursery at Chelsea, and flowers in the autumn months.—*Garden hybrid*.

FIG.—Veitch, *Cat.*, 1880, p. 10, with fig.; *The Garden*, xix., p. 636, with fig.; *L'Orchidophile*, 1883, p. 764; *Orchid Album*, vii. t. 301; *Veitch's Man. Orch. Pl.*, iv. p. 83; *Journ. of Hort.*, 1888, xvi. p. 131, f. 18.



CYPRIPEDIUM EXUL.

(From the *Gardeners' Chronicle*.)

— **C. EXUL**, O'Brien.—This novelty was sent to us by Mr. H. N. Ridley, the Director of the Botanic Gardens at Singapore, under the name of *C. insigne siamense*, and flowered in this country for the first time in 1892, proving to be quite distinct from *C. insigne*, and was consequently named as a new species. The foliage is similar in form to that of

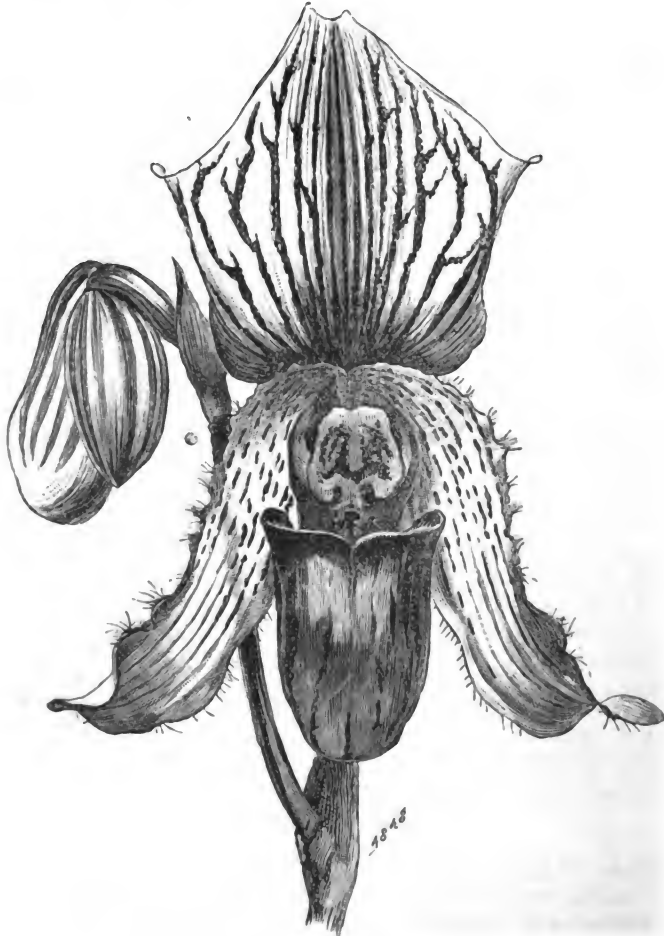
C. insigne, but the leaves are much stouter; dorsal sepal white, yellow at the base, irregularly blotched with purple; the petals resemble those of *C. insigne*, but the lip reminds one more of *C. Druryi*. It appears to be a very free growing species, but our experience of it up to the present time is that it is a very shy bloomer.—*Siam*.

FIG.—*Gard. Chron.*, 3rd ser., 1892, xi. p. 523, f. 77.

SYN.—*C. insigne exul*.

C. EXUL IMSCHOOTIANUM, Rolfe.—A variety with large flowers; dorsal sepal larger and furnished with darker coloured spots.

FIG.—*Lindenia*, vii. t. 327.



CYPRIPEDIUM FAIRRIEANO-LAWRENCEANUM.

(From the *Gardeners' Magazine*.)

C. FAIRRIEANO-LAWRENCEANUM, Hort.—One of the most distinct of recent acquisitions, was obtained by Thos. Statter, Esq., between *C. Fairrieum* and

C. Laurenceanum, and was exhibited by him before the Royal Horticultural Society on November 28th, 1893, when it received an award of merit. The general aspect of the flowers reminds one of the first named parent, but as might be expected the dorsal sepal in its dimensions partakes more of that of the other parent; in colour this latter organ is white in the upper part passing into green at the base, the whole covered with thick crimson-purple veins. The petals are green striped with purple, the stripes being broken up into spots at the basal half. Lip greenish purple.—*Garden hybrid*.

FIG.—*Gard. Mag.*, 1893, p. 728 (woodcut).

C. FAIRRIEANUM, *Lindley*.—A beautiful rare and distinct species of the stemless type. The leaves are distichous, loriform, channelled, of a light green colour, and the scapes green and pilose, the flowers produced very freely during the autumn months, and continuing in perfection for six weeks. They are large, with a dark purple ovary; the broad spreading dorsal sepal greenish-white, beautifully veined with dark purple; the petals, which are oblong-lanceolate, white, striped with green and edged with purple, are peculiarly deflexed and curved like the horns of a buffalo; and the large lip is brownish-green with purple reticulations. This plant is seldom seen doing well, the reason, we believe, being that it usually gets too much heat, for with us it succeeds best in the *Cattleya* house.—*Assam*.

FIG.—*Orchid Album*, ii. t. 70; *Bot. Mag.*, t. 5024; *Batem. Second Cent. Orch. Pl.*, t. 140; *Venia Orch.*, ii. t. 133; *Flore des Serres*, t. 1244; *The Garden*, iii. p. 431, with fig.; *Id.*, vi. p. 69, with fig.; *Id.*, xxiv. p. 442, with fig.; *Revue Hort. Belg.*, 1886, p. 37; *Veitch's Man. Orch. Pl.*, iv. p. 25; *L'Orchidophile*, 1891, p. 336; *Journ. of Hort.*, 1889, xviii. p. 40, f. 6.

C. "FIGARO," O'Brien.—"This is supposed to be the result of inter-crossing *C. Spicerianum* with *C. oenanthum superbum*, but, as with many of our garden hybrids, the cross has not been certainly recorded. The appearance of the flower of the new hybrid, however, seems to bear out the conjecture as to the parentage pretty clearly, especially in the purplish-crimson, flame-like rays which glow on the white background of the dorsal sepal much as in the favourite *C. oenanthum*. In form *C. Figaro* follows closely *C. Spicerianum*, and its dorsal sepal has the same broad chocolate line up its middle as in that species. The base of the dorsal sepal is bright green, the edge and apex pure white; staminode shining rose, with green spot in the centre; lower sepals green, with a few faint brown lines; petals curled upwards and backwards at the tips, dull rose with brown lines, their ciliate edges forming a narrow green margin; front of the pouch brownish-rose, the back yellowish, the whole surface of the flower shiny; scape dull purple, hairy; leaves as in *C. Spicerianum*, bright green, but exhibiting very obscurely a darker veining. A very compact and pretty variety" (James O'Brien, in *Gardeners' Chronicle*, 3rd ser., 1889, vi. p. 750).—*Garden hybrid*.

C. FITCHIANUM, *Williams*.—A cross between *C. Hookerae* and *C. barbatum*; leaves greyish-green, beautifully tessellated with deep olive-green. Scape one-flowered; dorsal sepal greenish-white, with deep green veins; inferior sepal similar in colour but much smaller; petals undulate on the margins, green, with deeper green veins at the base, and a few scattered wart-like spots,

tips dull reddish-purple; pouch large and full, green, suffused with dull purple, and netted with dark green. Blooms in winter and spring.—*Garden hybrid*.

FIG.—*Orchid Album*, viii. t. 350.

SYN.—*C. atys*.

C. FRASERI, *Rchb. f.*—This hybrid was raised by Mr. Fraser, of Derncleugh, near Aberdeen, and is the result of a cross between *C. hirsutissimum* and *C. barbatum*, or some closely allied species. It has the character of being a shy bloomer; leaves similar to those of *C. barbatum*, but slightly narrower; dorsal sepal yellowish, suffused and veined with reddish-purple and margined in the upper part with white, ciliate; petals narrow, elongate, taking a downward curve, spotted over at least two-thirds of their surface with purplish-brown on a pale rosy-purple ground; lip long and narrow, deep rosy-purple in front, greenish underneath.—*Garden hybrid*.

FIG.—*Lindenia*, vi. t. 253.

— **C. GALATEA**, *Rolfe*.—“This is one of Mr. Seden’s hybrids, but of which unfortunately the origin is unknown, perhaps through the seed having been washed off the pot, or some other accident to which even the most carefully recorded experiments are sometimes liable. It is, however, decidedly of the *insigne* type, and while possessing all the beauty of that species, there are also a number of important differences from which the other parent must be inferred; the general character is that of *C. insignis*, but the upper sepal is much lighter, almost primrose-coloured, the spots denser and more inclining to light purple-brown, and the broad white margin carried right round the sepal almost to the base; the petals are light purple-brown on their upper half, paler below, blotched with purple-brown for a third of their length on the dark portion, and for half their length on the paler one, all finely ciliate; the lip paler and very indistinctly veined, and the staminode with a somewhat less distinct tooth. I cannot trace these characters to the influence of any distinct species, and probably some hybrid is concerned in the parentage. Mr. Seden is strongly of opinion that *C. Harrisianum* is one of the parents, which would account for the somewhat varnished appearance of the petals, if not also for the spots on these organs. I thought of *C. vernizium*, but this, he says, is too modern. The leaf is very similar to that of these two hybrids—green, with somewhat indistinct darker tessellations. I cannot suggest any more likely parentage for the plant” (R. A. Rolfe, in *Gardeners’ Chronicle*, 3rd ser., 1888, iii. p. 168).—*Garden hybrid*.

FIG.—*Gard. Mag.*, 1893, March 4th (Supplement).

C. GASKELLIANUM.—See *C. NIOBE*.

C. GEMMIFERUM, *Rchb. f.*—A cross between *C. Hookeræ* and *C. purpuratum*, leaves tessellated with dark green, on a paler green ground. Scape one-flowered; dorsal sepal white, with closely set veins, and stripes of green; inferior sepal similar in colour, but smaller; petals green at base, passing into pale purple at the tips and bearing on the upper side several small blackish wart-like spots; pouch brownish-purple, the inflexed portion green, flecked and dotted with deep purple. Blooms during the summer months. Raised by Mr. Bowring, Forest Farm, Windsor.—*Garden hybrid*.



CYPRIPEDIUM GODEFROYAE.

C. GERMINYANUM, *Rehb. f.*—A cross between *C. villosum* and *C. hirsutissimum*. Leaves plain green, scape erect, one-flowered, the flowers, being very large; dorsal sepal brown, spotted with black, bordered with greenish-yellow; inferior sepal much smaller, yellowish-green in colour; petals much undulated, especially near the base, divided by a deep-coloured mid-rib, the superior half pale red, the inferior portion of a soft yellowish-green, the tips being violet-purple; pouch brownish-purple.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1890. xxi. p. 89, f. 12; *Id.*, 1893, xxvi. p. 67, f. 10.

C. GIGAS, *Hort.*—This fine hybrid is the result of a cross between *C. Lawrenceanum* and *C. Harrisianum nigrum*, and was raised by Mr. Bond, gardener to C. Ingram, Esq. Godalming. The dorsal sepal measures $2\frac{1}{2}$ inches in breadth and is veined with dark crimson-purple, with a white border and green at the tip. Petals broad, purplish, with a dark median line; lip purplish, shining.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 257, f. 42.

C. GLANDULIFERUM, *Blume*.—Leaves ligulate, obtuse, from 18 inches to 2 feet long, coriaceous in texture, and deep green; flowers some 5 inches across; dorsal sepal broadly ovate, creamy-white, passing into a yellowish hue in the centre, and streaked with lines of reddish-brown; inferior sepal similar in colour, and slightly smaller; petals some 5 inches long, slightly deflexed, spirally twisted, yellowish-green, streaked with reddish-brown, and bearing towards the base numerous glandular warts; pouch soft yellow, veined with reddish-brown. Summer months.—*New Guinea*.

SYN.—*C. praestans*.

C. GODEFROYAE, *Godefroy*.—This is a very interesting addition to the group represented by *C. concolor* and *C. nigrum*, and is in some respects intermediate between these two species. The plant, which is acaulescent, has ligulate oblong leaves, from 4 to 8 inches in length, purplish-red beneath, and tessellated in a variable manner, with light and dark green on the upper surface. The flowers, which stand each on a hairy purple spotted scape, are very charming, the roundish dorsal sepal and the deflexed oblong ovate, bluntly emarginate petals white, heavily spotted with chocolate-purple, while the lip is pouch-shaped, barely an inch long, white, marked all over with chocolate-purple spots, those of the outer surface being brighter. Flowers in summer.—*Eastern Asia*.

FIG.—*Orchid Album*, iv. t. 177; *L'Orchidophile*, 1883, p. 831, with fig; 1884, p. 362, plate; *Florist and Pomologist*, 1884, p. 37, with fig.; *Veitch, Cat.*, 1884, p. 18, with fig.; *The Garden*, 1884, xxv. p. 396, with fig.; 1885, xxvii. p. 444; *Bot. Mag.*, t. 6376; *Revue Hort. Belge*, 1886, p. 241; *Veitch's Man. Orch. Pl.*, iv. p. 27.

C. GODEFROYAE GARDENIANUM, *Gower*.—In this variety the flowers resemble those of *C. concolor* in shape, but are larger, while the ground colour is of the purest white, sparingly dotted with crimson. It is named after M. Garden, of Bois Colombes, near Paris.

C. GODEFROYAE HEMIXANTHINUM, *Rehb. f.*—A curious variety flowered by the late J. Day, Esq., Tottenham. It has sulphury ochroleucous sepals quite distinct from the normal form.—*Cochin China*.

C. GODEFROYAE LUTEUM, *O'Brien*.—A variety with primrose-yellow flowers, spotted with pale rosy-lilac.

C. GODEFROYAE MARIAE, *Hort. Belg.*—A distinct variety, having large flowers of great substance; petals very dark in colour; differs from *C. bellatulum* in having the petals bilobed, and from the type by the whiteness of its petals. Flowered for the first time in March, 1889, in the collection of M. Jules Hye, Ghent, and is dedicated to his wife.

FIG.—*Revue Hort. Belge*, 1889, p. 97, t. 9.

C. GODSEFFIANUM, *Rehb. f.*—A cross between *C. Boxallii* and *C. hirsutissimum*. Leaves ligulate, plain green; scape one-flowered; dorsal sepal pale yellow, suffused with brown, darker near the base; inferior sepal smaller, soft yellow, with a few dark spots in the centre; petals undulated at the margins, yellowish at the base, and densely spotted, mauve-purple at the tips; pouch soft brown. It was raised by N. C. Cookson, Esq., Wylam-on-Tyne.—*Garden hybrid*.

FIG.—*Revue Hort. Belge*, 1892, t. 8.

C. GOWERIANUM, *Hort. Sander*.—This is a fine hybrid, raised by Mr. Sander, of St. Albans, between *C. Laurenceanum* and *C. Curtisii*, partaking of the beauties of both its parents, but more resembling *C. Laurenceanum*.—*Garden hybrid*.

C. GRANDE, *Rehb. f.*—A truly grand hybrid of the *Selenipedium* group, raised by Mr. Seden, from *C. Roezlii*, fertilised by *C. caudatum*. It is the most robust-habited variety which is known, and a most striking plant. The leaves are sword-shaped, 2 to 2½ feet long, and of a bright glossy-green. The scape, which is many-flowered, grows 3 feet high, and stout in proportion. The flowers are large, with a remarkably extended lip; the elongate ovate incurved dorsal sepal is yellowish-white, marked with yellowish-green veins; the petals are ribbon-like, upwards of 1 foot long, pendulous, broadest at the base, where they are yellowish-white and hairy, the narrow pendent portion crimson, and the lip is large and prominent, narrow at the base, where the infolded lobes are whitish, spotted with crimson, the front portion greenish-yellow, paler and whitish beneath. The staminode is pale yellow, slightly flushed with crimson below, and fringed on its upper edge with blackish crimson hairs. It is a plant of exceptional merit.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1884, p. 7, with fig.; *Lindenia*, vi. t. 242; *Reichenbachia*, 2nd ser., i. t. 16; *Warner's Sel. Orch. Pl.*, iii. t. 33; *Veitch's Man. Orch. Pl.*, iv. p. 104.

SYN.—*Selenipedium grande*.

C. GRANDE ATRATUM, *Hort.*—This variety, as its name implies, is a dark coloured form, being more richly coloured in the petals and lip than *C. grande*.

C. HARRISIANUM, *Rehb. f.*—This is one of the hybrids raised by the late Mr. Dominy, and comes from *C. villosum*, fertilised by *C. barbatum*. The result has been a plant in many respects intermediate, of which there are several varieties. The leaves are ligulate, tridentate, and tessellated with dark and light green, as in the latter while they also have the polished appearance of

the former. The flowers, which grow on a hairy scape, are larger than those of *C. barbatum*, but inferior in size to those of *C. villosum*; the upper sepal is broad and shining, dark purple, tipped with white; the ligulate spreading petals are rich purple and glossy; and the lip is claret-coloured, tinged with green, the mouth of the sac fringed with bristles. We find this succeeds well in the *Cattleya* house.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 431; *Veitch, Cat.*, 1870, p. 24, with fig.; *Florist and Pom.*, 1871, p. 57, with fig.; *Veitch's Man. Orch. Pl.*, iv. p. 86.

SYN.—*C. hybridum*, *Hort. Bull.*

C. HARRISIANUM ATRO-PURPUREUM, *Hort.*—This form has the dorsal sepal of a very deep purple, and the lip dark purple.—*Garden Hybrid*.

C. HARRISIANUM DAUTHIERII, *Hort.*—This is considered by some to be a distinct hybrid, but we can only regard it as a variety of *C. Harrisianum*, which it much resembles. Dorsal sepal pale rosy-crimson in the centre, striped and veined with a darker tint of the same colour; yellowish-green towards the apex, and margined with cream colour; petals same colour as the sepal, with a bronzy hue, striped with brown on the superior part; lip brown, veined with maroon.—*Garden hybrid*.

SYN.—*C. Dauthierii*, *Hort. Belg.*

C. HARRISIANUM DAUTHIERII MARMORATUM, *Hort.*—This variety differs from the preceding in having the dorsal sepal and petals marbled and striped with various shades of yellow and purple, giving the flower a peculiar variegated and mottled appearance.—*Garden hybrid*.

FIG.—*Lindenia*, iv. t. 166 (*C. Harrisianum polychromum*); *Gard. Chron.*, 3rd ser., 1887, i. p. 576, f. 109; *Revue Hort. Belge*, 1889, p. 241 (plate).

SYN.—*C. Harrisianum Dauthierii striatum*.

C. HARRISIANUM DAUTHIERII, "THE ALBINO," *Hort. Lawrence.*—A very distinct variety with whitish-green flowers; it was exhibited by Sir Trevor Lawrence, Bart., at the meeting of the Royal Horticultural Society on 14th March, 1893.—*Garden hybrid*.

C. HARRISIANUM DAUTHIERII STRIATUM.—See *C. HARRISIANUM DAUTHIERII MARMORATUM*.

C. HARRISIANUM POLYCHROMUM.—See *C. HARRISIANUM DAUTHIERII MARMORATUM*.

C. HARRISIANUM PURPURASCENS, *Hort.*—In this plant the dorsal sepal is deep vinous-red at the margins, and flushed with purple, the remaining portions of the flower also deeper in colour.—*Garden hybrid*.

C. HARRISIANUM SUPERBUM, *Hort. Veitch.*—A variety with very superior flowers, larger and of more substance than in the type; the dorsal sepal broad, very highly coloured, as also are all the other portions of the flower, and with a peculiar polished appearance; a beautiful form.—*Garden hybrid*.

FIG.—*Lindenia*, iii. t. 118; *Veitch's Man. Orch. Pl.*, iv. p. 87.

C. HARRISIANUM VIVICANS, *Hort.*—In this form the colours are very vivid, the upper part of the dorsal sepal being light green.—*Garden hybrid.*

C. HARRISIANUM WALLAERTII, *Hort. Belg.*—The flower in this variety is larger than the type; the dorsal sepal is margined with white, and veined and suffused with purplish-violet, of a much deeper tint than in the ordinary forms.—*Garden hybrid.*

SYN.—*C. Wallaertii.*

C. HAYNALDIANUM, *Rehb. f.*—This species, which is named after Dr. Haynald, Archbishop of Kaloesa, in Hungary, comes very near to *C. Lowii*. It has long distichous sub-erect dark green coriaceous leaves, and hairy green scapes, 1 to 1½ foot high, and two or more flowered. The flowers are large and showy; the dorsal sepal yellowish-green at the base blotched with bold patches of brown, and pinkish-white on the upper part; the petals are fully 3 inches long, spathulate-oblong, greenish-yellow, margined with pale pink towards the tips, and heavily blotched with brown in the lower half, and the saccate bi-auriculate lip is green, tinged with pale purple. It blooms during February and March.—*Philippine Islands: Manilla.*

FIG.—*Bot. Mag.*, t. 6296; *Xenia Orch.*, iii. t. 212.

C. "H. BALLANTINE," *Rolfe.*—"Dorsal sepal broadly roundish-ovate, apiculate, 1½ inch diameter, white, with about thirteen dark purple nerves, which pass into pale green at the extreme base, and a number of somewhat oblique connecting nervelets; petals oblong, straight, divaricate, 2 inches long by ¾ inch broad, ciliate, pallid below, light purplish on margins and apical half, with eight rows of dark purple dots below, which pass into lines on the upper half; lip much like *C. purpuratum* in shape, light purple-brown in front, with darker nerves, pale greenish behind; staminode tri-cuspidate, with roundish outline, the central tooth very short, the outer pair broadly falcate, acute, and much longer, palest whitish-green, with rather numerous dark green reticulations, shortly-hairy" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 408).—*Garden hybrid.*

C. HERA, *Rolfe*—This hybrid was raised in the collection R. H. Measures, Esq., of the Woodlands, Streatham, between *C. Spicerianum* and *C. villosum*. "The characters of both species are well represented in the hybrid, those of *C. Spicerianum* somewhat preponderating in the dorsal sepal, and those of the other parent in the rest of the flower, though on the whole it is as thoroughly intermediate as hybrids generally are; dorsal sepal broadly orbicular, the margins strongly reflexed, colour white, with light green base and broad dark purple median band, and some light purplish marblings on either side of the same, and about half way to the margin; lower sepal ovate, and lightest green; petals cuneate-oblong, the upper margin undulate, the lower half pale green, the upper one light purple-brown, passing into lines of dots below, median band narrow, dark purple-brown; lip smaller than in *C. villosum*, but otherwise much resembling it, light purple-brown in front, paler behind, internally marbled, and spotted with bright purple-brown; staminode obovate-orbicular, the margin slightly raised, surface strongly papillose, colour light purple-brown, with a central dark green, slightly raised boss" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, vii. p. 104).—*Garden hybrid.*

C. HERMIONE, *O'Brien*.—A distinct and dwarf-growing novelty which was flowered by Reginald Young, Esq., of Liverpool. It is a cross between *C. Spicerianum* and *C. barbatum* *Warnerii*. Mr. O'Brien describes it thus:—"The leaves are very pale green with a light tracery of dark green; the flower-stems about 6 inches in height. The beautiful pure white upper sepal of the flower is nearly $2\frac{1}{2}$ inches broad by $1\frac{1}{2}$ inch long, and it has a bright green base, a purple line up the centre, and shaded rose-purple veining extending over the basal half. The horizontally extended petals are greenish-white with a rose-coloured tinge and some lines of chocolate dots at their bases. The lip greenish-white, tinged on the face with reddish-brown; the lower sepal whitish with 'green lines' (*Gardeners' Chronicle*, 3rd ser., 1893, xiv. p. 682).—*Garden hybrid*.

C. HIRSUTISSIMUM, *Lindley*.—A beautiful bold-habited species of the stemless section. It has pale green distichous elongate ligulate carinate leaves, a foot or more in length, and glabrous. The flowers proceed from the centre of the young growths, on green hairy scapes a foot long, the whole back of the flower densely hirsute, the sepals being all ciliated. The dorsal sepal is rhomboidal-cordate, dark purplish-green with a broad green margin; the petals are large, broadly spatulate, very blunt, ciliated, the narrowed claw-like base undulated, green dotted with purple, the front part wholly purple; and the lip large, deep green tinged with purple. The blossoms, which often measure 6 inches across, open in March, April, and May, and last six weeks in perfection.—*India: Bhotan, Assam*.

FIG.—*Bot. Mag.*, t. 4990; *Batem. Second Cent. Orch. Pl.*, t. 149; *Flore des Serres*, t. 1430; *Warner, Sel. Orch. Pl.*, i. t. 15; *Xenia Orch.*, ii. t. 132; *Belg. Hort.*, vii. p. 353, with tab.; *Veitch's Man. Orch. Pl.*, iv. p. 30; *Journ. of Hort.*, 1887, xiv. p. 293, f. 52.

C. HOOKERAE, *Rehb. f.*—One of the dwarfer stemless section, the leaves of which are most beautifully variegated, being of a bright dark green, finely tessellated with irregular yellowish-green spots or bands; they are broadly oblong-ligulate, and fleshy-coriaceous in texture. The flowers are somewhat deficient in size compared with others, and, if not very showy, are certainly pretty; the sepals are yellowish with a green centre; the petals spreading, ciliate, spatulate, the narrow part undulated, green with small purple spots, and the upper part acute, rosy-purple; and the lip is green suffused with dull purplish-brown. The staminode is purple with pale margins.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5362; *Batem. Second Cent. Orch. Pl.*, t. 123; *Flore des Serres*, t. 1565; *Xenia Orch.*, ii. t. 141; *Veitch's Man. Orch. Pl.*, iv. p. 31.

C. HOOKERAE BULLENIANUM, *Rehb. f.*—This is a variety of *C. Hookeræ*, with which species it was originally imported. It differs in having leaves less distinctly marbled than the type, and in the flowers being smaller, and inferior in colour. Flowers in March and April.—*North Borneo*.

C. HOOKERAE VOLONTEANUM, *Rolfe*.—This distinct variety was introduced by Messrs. Low & Co. The leaves are shorter, narrower, and more rigid than in the type; the flower is larger and more brilliantly coloured in all its parts. We recently saw an importation of this in flower, and we noticed there was a great variety. A variety called *giganteum* has been figured in the *Journal of Horticulture*, 1893, xxvii. p. 27, f. 4.—*Borneo*.

C. HOOKERO-VEITCHII.—See *C. OENONE*.

C. HORNIANUM, *Rehb. f.*—"This is a cross between *C. superbiens* and *C. Spicerianum*, made by Mr. F. Horn, the Orchid grower of Baron Nathaniel von Rothschild, at Hohe-Warte, near Vienna. It is very short and strong, as I learn. Leaves of *C. superbiens* (*Veitchianum*), very pallid, with pallid transverse interrupted bars; flower as large as that of a good *C. Spicerianum*; peduncle ochre, with reddish-purple stripes, hairy; bract shorter than the hairy ochre-coloured ovary; upper sepal quite formed as in *C. Spicerianum*, white, with a dark purple mid-line, yellowish-green at the base, with a few lines of nearly microscopical dark blackish-purple spots; petals a little bent downwards, as in *C. superbiens*, a little undulate on the outer margin, lightest greenish, by lightest white-purple on the margins; the mid vein is covered with numerous blackish-purple spots, on each side there are six such rows and innumerable similar spots scattered everywhere; lower sepals elliptic acute, half as short as the lip; lip much in the way of that of *C. Spicerianum*, though the shoe is longer, making a concession to *C. superbiens*; it is purple-brown" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, ii. p. 428).—*Garden hybrid*.

C. HUYBRECHTIANUM, *Verraet*.—A magnificent hybrid obtained by Mr. Verraet, of Ghent, the result of a cross between *C. hirsutissimum* and *C. Spicerianum*. "The upper sepal is dull yellow, the base very finely speckled with brown, and shading into black, the centre white at the base, with many and minute specks or spots of pink, with a wide border of pure white, the mid-rib deeper pink than are the spots in the centre, in shape rounded at the edges, and the tip green and hooded; the outer surface is evenly tinged with rosy-lilac; the lower sepal straw-coloured with two lines of black dots; the petals are of medium size, slightly pendent, ground greenish-yellow for two-thirds of their length, spotted with dark chesnut brown, rosy-purple towards the tip, which is very wide and spoon-shaped, the upper part delicately wavy, and lightly fringed with creamy-white; the lip coppery bronze, spotted with brown in the centre and round the orifice; the staminode rosy-lilac, lightly bordered with pinkish white; the upper part has two white spots, and the centre is citron-yellow" (Comte de Buysson, in *Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 554).—*Garden hybrid*.

C. HYBRIDUM, *Hort. Bull.*—See *C. HARRISIANUM*.**C. HYEANUM**.—See *C. LAWRENCEANUM HYEANUM*.

C. INSIGNE, *Wallich*.—A well-known good old species of the acaulescent group, furnished with distichous ligulate light green leaves, and producing its solitary flowers on purple hairy scapes during the winter months, lasting six weeks in bloom. The broadly ovate dorsal sepal is greenish below, thickly spotted with purple-brown and tipped with white; the oblong-obovate petals and the saccate lip are greenish, more or less tinged with olive brown. This is a most useful species for autumn-flowering, and should be largely grown on account of the long-lasting properties of its

flowers; it thrives best when grown in the cool house.—*India: Nepal, Sylhet, Khasya.*

FIG.—*Lind. Coll. Bot.*, t. 32; *Lodd. Bot. Cub.*, t. 1321; *Hooker, Es. Fl.*, t. 34; *Bot. Mag.*, t. 3412; *Maund. Bot.*, ii. t. 56; *Florist and Pom.*, 1870, p. 280, with fig; *Orchid Album*, iii. t. 155; *Blume, Rumphia*, t. 195; *Griff. Pl. Asiat.*, t. 322; *Hart, Parad.*, i. t. 1; *Gard. Chron.*, 3rd ser., 1890, viii. p. 691, f. 135.



CYPRIPIEDIUM INSIGNE.

C. INSIGNE ALBO-MARGINATUM, *Hort.*—This is a very peculiar and beautiful variety, having flowers of a yellowish shade. The dorsal sepal, which is entirely margined with white, is quite devoid of the spotting usually found in the type.—*India.*

FIG.—*Orchid Album*, v. t. 232.

C. INSIGNE CHANTINII.—See *C. INSIGNE PUNCTATUM VIOLACEUM*.

C. INSIGNE CLARKEI, *Hort.*—This variety was shown by W. C. Clarke, Esq., of Sefton Park, Liverpool, under the name of *C. Clarkei*. The flowers resemble those of the variety *punctatum violaceum*, but differ in having smaller spots.

SYN.—*C. Clarkei*.

C. INSIGNE EXUL.—See *C. EXUL*.

C. INSIGNE FÖRSTERMANNI, *Hort. Belg.*—A variety with a pubescent dorsal sepal, ornamented with brown hieroglyphic markings and with a wide white border; the upper spots are found in the white part and are of a violet colour; the petals are of a waxy yellow at the base, netted with olive-brown, greenish at the edges; pouch brown, very shining. This variety is in the fine collection of M. Jules Hye, of Ghent, where it flowered for the first time in 1887.

C. INSIGNE HORSMANIANUM, *Rehb. f.*—"The odd sepal is blunt, cuneate-oblong, and the upper part is quite white, the lower, like the remainder of the flower, has likewise the usual colours; the lower sepals are narrow, oblong-ligulate, acute; the petals are directed forwards and are spreading at the top; the lip is very remarkable in having a beak in the middle of the mouth and rather low side-partitions" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 693).

C. INSIGNE ILLUSTRE, *Hort.*—Under this name a distinct variety was shown by R. J. Measures, Esq., of Camberwell, before the Royal Horticultural Society on November 28th, 1893, where it obtained an award of Merit. The ground colour is of a clear yellow, having light chestnut-brown spots on the sepals, petals, and upper portion of the lip, and a few crimson spots on the white tip of the dorsal sepal.



CYPRIPEDIUM INSIGNE MAULEI.

(From the *Gardeners' Chronicle*.)

C. INSIGNE LONGISEPALUM, *Hort. Sander.*—This variety differs from the type by the long narrow dorsal sepal of a clear green, shaded and veined with brown at the base, and the absence of spots.

C. INSIGNE MACFARLANEI, *Rolfe*.—The flowers are of delicate yellow, the dorsal sepal has a wide white margin, and like the preceding variety it is without spots.

C. INSIGNE MACULATUM, *Hort*.—A very handsome form with regular flowers. The dorsal sepal is somewhat like that of the variety *Maulei*, but less spotted. This is one of the many varieties possessed by W. S. Kimball, Esq., of Rochester, N.Y., who has one of the largest collections of these varieties in existence.

C. INSIGNE MAULEI, *Moore*.—A very handsome variety of *C. insigne*, which has the same habit of growth, but has shorter and smaller foliage; it flowers at the same time with the type, but is much handsomer, the broad incurved dorsal sepal being more tapered below, pure white on the upper half, heavily and regularly spotted with purple above and purple-brown below, the spots larger and bolder, so that the whole flower is richer in colour, while the lip is broader and of a light olive brown. Flowers in autumn, and the blossoms will continue in perfection six weeks. This was introduced by Messrs. Maule & Sons, Bristol, after whom it is named.—*India*.

FIG.—*Floral Mag.*, t. 57; *Flore des Serres*, t. 1564 (poor); *Gard. Chron.*, N.S., xviii. p. 716, f. 126; *The Garden*, xxi. p. 444, t. 342, left-hand fig.

C. INSIGNE MAXIMUM, *Desbois*.—This is said to be the finest variety of all; the dorsal sepal is very large, undulate, clear green striped with dark green, spotted with brown, with a large white portion at the top spotted with violet; petals broad, olive-green shaded and netted with clear brown; pouch wide, yellow shaded with yellowish-brown.—*Sylhet*.

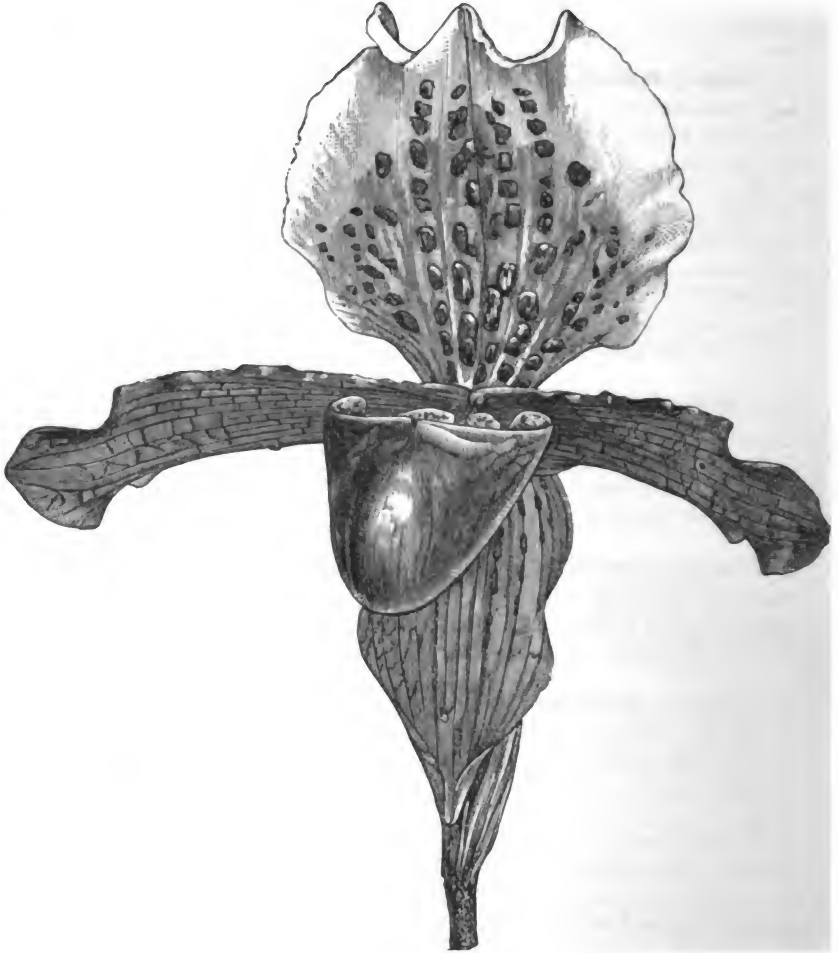
C. INSIGNE MOENSI, *Desbois*.—A variety with an ochre-yellow dorsal sepal, spotted with black and bordered by pure white; petals broad, undulate, yellow, veined and netted with brown; pouch yellow marbled with brown, very shining. This variety is in the collection of Mr. Moens of Lede, Belgium.

C. INSIGNE MOOREANUM, *Williams*.—A well-marked and handsome variety of this well-known popular Orchid, having long narrow ligulate green leaves, and tall purple hairy flower scapes 18 to 20 inches high, supporting a large flower which issues from a pale green compressed spathe; the sepals and petals stand so as to form a cross, the dorsal sepal being about $1\frac{1}{4}$ inch across, fornicate, with the margins undulate, the margin for about $\frac{1}{4}$ of an inch white, this width being slightly increased at the folded apex, and the remainder of the surface pale yellowish-green, freely decorated throughout with spots of purple-brown; the lower sepal is smaller but well displayed, and is of the same colour, with the purple spots paler; the linear-obovate petals are upwards of 2 inches long, finely crisped at the base, and more undulated towards the apex, glossy, ciliate, greenish-yellow tinged with pale purplish-brown along the veins, and two rows of dots along the margin, the lower line longer, the upper one shorter, and a few scattered between near the base, where there are purple hairs; the pouch-shaped lip has two obtuse wide-spread ears, and is greenish-yellow suffused with light brown, polished; the staminode yellow, obversely heart-

shaped, with an emarginate apiculate apex, a central orange-coloured boss, and a sub-cordate base, where the surface is covered with stiff purple hairs. It is a very desirable form.

FIG.—*Orchid Album*, x. t. 445.

C. INSIGNE PUNCTATUM VIOLACEUM, O'Brien.—This choice variety is a still finer plant than *C. insigne Maulei*, the flowers, which on the whole are



CYPRIPEDIUM PUNCTATUM VIOLACEUM.

(From the *Gardeners' Chronicle*.)

rather smaller, being superior in size as regards the breadth of the dorsal sepal, the white portion of which is equally broad and conspicuous, the purple spotting being considerably bolder and more marked; the lip, moreover, is smaller and

narrower, and of a darker chestnut brown. It was first bloomed by Messrs. E. G. Henderson & Son, and is found in some collections under the name of *C. Chantinii*. Flowers in autumn and spring.—*Nepoul*.

FIG.—*Revue Hort.*, 1878, p. 130, with tab. (*Chantinii*); *Gard. Chron.*, n.s., xviii. p. 716, f. 127; *The Garden*, xxi. p. 444, t. 342, right-hand fig.; *L'Orchidophile*, 1885 p. 36, with tab. (*Chantinii*); *Orchid Album*, vi. t. 278.

SYN.—*C. insigne Chantinii*, *Hort. Gall.*

C. INSIGNE SANDERAE, *Hort. Sander*.—A beautiful variety imported with others by Messrs. Sander & Co., and named in honour of Mrs. Sander; the dorsal sepal is white in the upper part and at the margins, light yellowish-green at the base with a few small brown spots; petals undulate, sulphur-yellow. This gem is in the possession of Baron Sir J. H. W. Schröder.

FIG.—*Journ. of Hort.*, 1891, xxiii. p. 447, f. 84; *Gard. Chron.*, 3rd ser., 1891, ix. p. 669, f. 96.

C. INSIGNE WALLACEI, *Hort.*—The leaves of this variety are longer and narrower than in the type; the dorsal sepal is somewhat like that of the variety *punctatum violaceum*, but the white portion is smaller, and the spots on the dorsal sepal have a reddish-black hue.

C. IO, *Rehb. f.*—This splendid hybrid is the result of a cross between *C. Argus* and *C. Lawrenceanum*, and was raised by N. C. Cookson, Esq., of Wylam-on-Tyne. Leaves similar to those of *C. Lawrenceanum*; scape one-flowered, flowers large and bold; dorsal sepal broad, sub-rotund, white, streaked alternately with green and rich purple; inferior sepal much smaller, white, veined with green; petals strap-shaped, acute, green suffused with pale purple, and clear pale purple at the tips, the basal portion profusely ornamented with large black wart-like spots; pouch large and full, brownish-purple, pale-green on the under side. "It is called *Io*, in honour of her Royal Highness *Io*, daughter of King *Inachus*. *Io* having smiled in too gracious a way on *Jupiter*, had the sad fate to be changed into a cow by *Juno*, for a time, during which herbivorous period of her life she was watched by the hundred-eyed *Argus*. Now this *Cypripedium* being like *C. Argus*, I have named it *Io*, in order to associate the two together" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1886, xxv. p. 488).—*Garden hybrid*.

FIG.—*Reichenbachia*, i. t. 23; *Revue Hort. Belge*, 1888, p. 13 (plate).

C. IO GRANDE, *Hort.*—A variety superior to the preceding, the flower being larger in all its parts.

C. JAVANICO-SUPERBIENS, *Bleu*.—This hybrid is a cross between *C. javanicum* and *C. superbiens*, and was raised by M. A. Bleu, of Paris. "Upper sepal pale green, with deeper green veins and whitish margin; lower sepal much smaller, white with light green veins; petals green, spotted with blackish warts two-thirds of their length; the apical third pale rose-purple with fewer spots; lip brown in front, pale green beneath, the infolded lobes reddish-brown; staminode pale yellow-green, with deep green markings" (*Veitch's Man. Orch. Pl.*, iv. p. 87).—*Garden hybrid*.

✓ **C. JOHNSONIANUM**, *Hort. Sander*.—This hybrid is the result of a cross between *C. nitens superbum* and *C. Lawrenceanum*. "The lip and petals" are described as being "of a burnished purple; the lower area of the dorsal sepal is deep green, the upper portions and edges pure white, lines of purple dots running from top to bottom."—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvi. p. 171, f. 30.

C. "JOSEPHINE JOLIBOIS," *Hort. Gall.*—A cross between *C. Harrisianum* and *C. insigne punctatum violaceum*. The inferior part of the flower resembles the *C. insigne* type, while the upper part resembles more its variety *punctatum violaceum*; the dorsal sepal is, however, larger and whiter. It was raised by the late M. Jolibois, of Paris.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1892, p. 336.

C. JUNO, *N. E. Brown*.—A hybrid between *C. callosum* and *C. Fairrianum*, raised by Mr. A. J. Keeling, gardener to Drewitt O. Drewitt, Esq. It is a dwarf grower, bearing leaves about 3 inches long; the flowers resemble those of *C. Fairrianum* in shape and are of the same size; the dorsal sepal is somewhat flat, bright purple, nerved and slightly reticulated with a deeper purple, bordered with white and greenish at the base; petals curved, light green, purple at the extremities and at the margins, and numerous dark purple-brown spots running over the whole length of the nerves; the pouch is longer and more acute than that of *C. Fairrianum*, olive-brown at the base veined with purple-brown.—*Garden hybrid*.

C. KAIETEURUM.—See *C. LINDLEYANUM*.

C. KLOTZSCHIANUM, *Rehb. f.*—This old species was discovered by Richard Schomburgk as far back as 1842 near the Roraima Mountain in British Guiana. It was rediscovered in 1884 by Mr. Im Thurn in another locality. In 1885 Messrs. Sander & Co. imported it and offered it under the name of *C. Schomburgkianum*. It has since flowered, and can only be considered to be a form of *C. caricinum*.—*British Guiana*.

FIG.—*Bot. Mag.*, 7178.

SYN.—*C. Schomburgkianum*.

C. LAEVIATUM.—See *C. PHILIPPINENSE*.

C. LAFORCADEI, *Hort.*—This is a cross between *C. barbatum* and *C. insigne punctatum violaceum*, and is closely allied to *C. Barteti*. It was raised by Mr. Bauer at La Muette, Paris. Leaves faintly tessellated, pale green, flowers large and handsome; dorsal sepal light yellowish-green near the base, and in the centre flushed with veins of purple, the apex white, this being continued as a marginal border nearly to the base; inferior sepal smaller, pale green, sparingly spotted with brown; petals purplish-brown, streaked with veins of a deeper hue, at the base, however, they are greenish, more or less spotted with purple; pouch brownish, suffused with red.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1888, p. 121 (plate).

C. "LA FRANCE," *Hort.*—A garden hybrid, between *C. niveum* and *C. nitens*. The plant is of dwarf compact habit, having leaves some 4 inches long, beautifully tessellated with dark green upon a light green ground, plain light green beneath; the flower is some 4 inches across; dorsal sepal snow-white, with a tinge of lemon at the base, freely spotted in the centre with magenta; lower sepal white, faintly spotted; petals broad, pure white, flushed with carmine in the basal half; lip medium sized, pure white. This very beautiful form comes to me from Messrs. Seeger & Tropp's Orchid Nursery, Dulwich. It is certainly the most charming hybrid of the *niveum* group I have yet seen" (W. H. Gower, in *The Garden*, 1892, xli. p. 48).—*Garden hybrid*.

FIG.—*Le Moniteur d'Horticulture*, 1892, March, p. 54 (plate).

C. LATHAMIANUM, *Rehb. f.*—"This hybrid, between *C. villosum* (male) and *C. Spicerianum* (female), was raised by and has recently bloomed with Mr. W. B. Latham, Curator of the Botanic Gardens, Birmingham, who kindly sent me a good peduncle, and whose name it duly bears. It is one of those hybrids which produce flowers with the characters of both parents. You might call the flowers those of *C. villosum* with the median sepal of *C. Spicerianum*. The leaves are stated to be exactly like those of the last named species. The flower was a facsimile of that of *C. villosum* in its general shape and in its size; the median sepal, however, is rather that of *C. Spicerianum*, white, with a dark mid-line of purple, green at the base, with a few lines, cuneate elliptic apiculate, with replicate sides; petals light greenish ochre-coloured outside, with a dark mid-line and brown margins undulate near the apex. Inside, the superior part is light ochre-coloured at the base, then dark brown to the top, greenish at the apex and lower sides; dorsal sepal cuneate-oblong, minutely acute, greenish, shorter than the lip, which is like that of *C. villosum*, though it is of a lighter greenish ochre-colour; staminode nearly square, as in *C. villosum*, with red hairs at the base, white borders on the side, retuse and most obscurely apiculate and with a green knob in front of the apex"—(H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 360).—*Garden hybrid*.

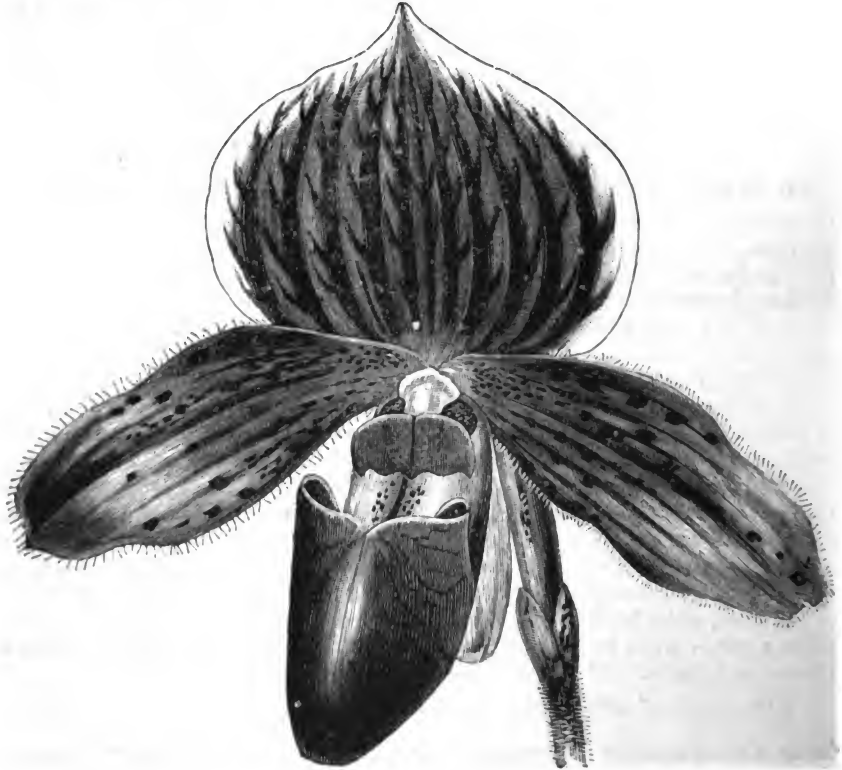
FIG.—*Journ. of Hort.*, 1889, xviii. p. 175, f. 27.

C. LATHAMIANUM INVERSUM, *Sander*.—This was raised by C. L. Ingram, Esq., of Godalming. "It is the reverse cross of the preceding, *C. villosum* being the seed parent, and *C. Spicerianum* the pollen parent. Its chief difference is that the dorsal sepal has more conspicuous and longer lines and dots of colour" (R. A. Rolfe, in *Reichenbachia*, 2nd ser., i. t. 10).—*Garden hybrid*.

C. LAWREBEL, *Lawrence*.—One of the most distinct and beautiful hybrids that has ever come before the Orchid world. It was raised by Sir Trevor Lawrence, Bart., at Burford Lodge, and is a cross between *C. Lawrenceanum* and *C. bellatulum*. The leaves resemble those of the first named parent. The dorsal sepal is 2 inches broad, magenta-purple veined with deep maroon-purple and margined with pure white with a vestige of greenish pigment at the base; petals more than 2 inches long and 1 inch broad, of a lovely rosy-purple, which becomes intensified near the extremities, and passes into green in the upper halves near the base, veined with brownish-purple, the nerves covered by lines of a few large and many smaller spots of an intense blackish-purple, edges slightly

ciliate; pouch $1\frac{1}{2}$ inch in length and nearly 1 inch broad, maroon-purple in front veined longitudinally by a deeper shade. Staminode very large, $\frac{1}{2}$ inch wide and $\frac{3}{4}$ inch deep, of an intense deep purple-maroon.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 293, f. 50; *Gard. Chron.*, 3rd ser., 1892, xi. p. 560, f. 82; *Orchid Album*, xi. t.



CYPRIPEDIUM LAWREBEL.

(From the *Journal of Horticulture*.)

C. LAWRENCEANUM, *Rehb. f.*—This remarkably handsome species was introduced by Mr. F. W. Burbidge when collecting for Messrs. Veitch & Sons, and was named in honour of Sir Trevor Lawrence, Bart., a gentleman whose great love of Orchids fully entitles him to such a compliment. It is one of the stemless kinds, with distichous broadly oblong acute channelled leaves, about 1 foot long, and of a most ornamental character, being tessellated with a bright whitish-green on a dark green ground, the markings having a very distinct and striking appearance. The flowers are produced singly or in pairs on an upright purple downy scape, and are large and showy, the dorsal sepal being very broadly ovate, white striped with numerous shining broad purplish lines; the petals horizontal, broadly linear-oblong, about $\frac{1}{2}$ inch wide and $2\frac{1}{2}$ inches long, ciliate, green, tinged with purple at the tip, the margins



CYPRIPEDIUM LAWRENCEANUM.
(From Messrs. J. Veitch & Sons' Catalogue.)

dotted with several dark purple hairy warts, the lower halves flushed with pale wine-red; and the lip 2 inches long, almost cylindrical, of a purplish-brown above, yellowish-green below. It flowers during the summer months.—*Borneo*.

FIG.—*Bot. Mag.*, t. 6482; *Veitch, Cat.*, 1879, p. 9, with fig.; *Floriast and Pom.*, 1880, p. 112, with fig.; *Orchid Album*, i. t. 22; *Gard. Chron.*, N.S., xix. p. 777, fig. 134; *L'Orchidophile*, 1882, p. 245; *L'Illust. Hort.*, 1883, xxx. t. 478; *Veitch's Man. Orch. Pl.*, iv. p. 37.

C. LAWRENCEANUM COLORATUM, *Rchb. f.*—"This is very distinct, by its median sepal not being very retuse, but very markedly acute. The very broad dark nerves have the interstices tinted with light mauve colour, and the warts on the petals are numerous and strong" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, ii. p. 272).

✓ **C. LAWRENCEANUM HYEANUM**, *Rchb. f.*—This handsome variety was named in honour of M. Jules Hye, of Ghent. It is a beautiful albino, having the dorsal sepal of the purest snow-white, veined with light green; petals also yellowish-green, with deeper green veins; pouch bright green, netted with veins of a deeper hue. A superb variation from the normal plant.—*Borneo*.

FIG.—*Lindenia*, i. t. 42; *L'Orchidophile*, 1891, p. 45; *Reichenbachia*, 2nd ser., i. t. 23.

SYN.—*C. Hyeanum*.

✓ **C. LEEANUM**, *Veitch*.—A well-marked hybrid between *C. Spicerianum* and *C. insigne Maulei*. In its neat habit of growth, and in various other points, it takes most after *C. Spicerianum*. It has green leaves, resembling those of that species, and rather taller scapes, bearing the handsome flowers, which have the dorsal sepal broadly oval, flat, pure white, similar in form to *C. insigne Maulei*, but having a distinct broad dotted line down its centre, and the base emerald-green, with radiating spots of mauve colour running upwards into the white part; the petals are similar to *C. insigne Maulei*, and the lip a shining brownish-red. This is a very distinct and desirable plant, and was raised by Mr. Seden, and exhibited by Messrs. Veitch & Sons, for the first time, in January, 1884. Its name commemorates W. Lee, Esq., of Downside, one of our most zealous cultivators of Orchids. Blooms in December and January.—*Garden hybrid*.

FIG.—*Orchid Album*, v. t. 223; *Lindenia*, iii. t. 125; *Revue Hort. Belge*, 1885, p. 232.

C. LEEANUM BIFLORUM, *N. E. Brown*.—A variety which appears to differ only in usually producing two flowers on a scape.

C. LEEANUM ENGELHARDTAE, *Hort*.—A cross between a variety of *C. insigne*, probably *Maulei*, and *C. Spicerianum*. It differs from *C. Lecanum* in having the petals of a richer yellow and the veins of carmine being interrupted, which gives them the appearance of lines of dots. It is named in honour of Madame Constantin d'Engelhardt, the wife of one of the principal Orchidophiles of Russia.—*Garden hybrid*.

FIG.—*Lindenia*, vi. t. 235.

SYN.—*Cypripedium Engelhardtæ*.

C. LEEANUM, *Fitt's variety*.—A variety with a green pouch was exhibited before the Royal Horticultural Society on November 14th, 1893, by Mr. Fitt, gardener to Earl Cowper, Panshanger, Hertford.

C. LEEANUM GIGANTEUM, *Rolfe*.—This giant form is the result of a cross between *C. Spicerianum* and a large form of *C. insigne* which was obtained by Mr. Heath, of Cheltenham. The dorsal sepal is of a purer white than any other form, and measures over $2\frac{1}{4}$ inches in diameter, while the petals are nearly 3 inches long.—*Garden hybrid*.

FIG.—*Reichenbachia*, 2nd ser., ii. t. 57; *Gard. Mag.*, 1892, p. 48 (woodcut).

C. LEEANUM MACULATUM, *Hort*.—This is a very superb form; the dorsal sepal is white, with a blotch of bright green at the base, the petals being heavily spotted with purplish-magenta, and the pouch flushed with crimson.

C. LEEANUM SUPERBUM, *Veitch*.—A cross between *C. insigne* *Maulei* and *C. Spicerianum*. Of this form we have seen numerous examples in the Burford Lodge collection, some of them being deserving of special names. The variety in question is chiefly to be distinguished in the superior size of the dorsal sepal, and in the green patch at the base being reduced, giving a greater area of white, whilst the spotting is deeper in colour. It is a charming plant.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1885, p. 238; *Revue Hort. Belge*, 1885, p. 232; *Veitch's Man. Orch. Pl.*, iv. p. 89.

C. LEMOINIERIANUM, *Rehb. f.*—This hybrid, which closely resembles *C. calurum*, was raised by Mons. Raymond Lemoinier, of Lille, who exhibited it at the Quinquennial Exhibition in Ghent in 1888, and obtained the prize which was offered for the finest new seedling Orchid. "No record of its parentage was kept, but it evidently belongs to the same section as *C. Sedeni*, and may be a cross between a variety of that hybrid and, perhaps, *C. calurum*. It has a very robust habit; both upper and lower sepals are creamy-white on the inner surface, which is longitudinally transversed by alternate red and green zig-zag lines; the outer surface is of a deep purplish-red, which shows through at the sides on the inner surface of the upper sepal; the lower sub-orbicular concave sepal is much larger than the upper one, which is oblong-ovate; the ligulate-lanceolate petals are twisted upwards near the apex, which is purple-red, passing into creamy-white towards the broader base, where there is a tuft of reddish hairs; the lip is carmine in front, passing into greenish-white behind, and the inflexed lobes are ivory-white, covered with purple spots; the staminode is also ivory-white, with a fringe of dark purple hairs."—*Garden hybrid*.

FIG.—*Reichenbachia*, ii. t. 89.

C. LEONAE, *L. Linden*.—This is a cross between *C. insigne punctatum violaceum* and *C. callosum*, the result being intermediate between the two parents. The dorsal sepal is of large size, nearly round, dark green at the base, striped and spotted with crimson-purple and reddish-brown, and broadly margined with white; the petals and lip as regards form remind one of *C. callosum*, and are of a vinous-purple colour; the petals without spots and with a pale green border at the extremities. It is dedicated to Mrs. H. S. Leon, of Bletchley.—*Garden hybrid*.

FIG.—*Lindenia*, viii. t. 360.

C. LEUCORRHODUM, *Rehb. f.*—A cross between *C. Roezlii* and *C. Schlimii albiflorum*. In this form the leaves are strong and plain green. Scape many-flowered; dorsal sepal white, tinged with soft rose at the base; inferior sepal pure white; petals long and narrow, white, passing into pale rose at the tips; pouch white, tinged with bright pink, the inflexed lobes pure white. It is a pretty flower, blooms during the summer months.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1886, xii. p. 129, f. 21; *Orchid Review*, i. p. 169, f. 11.

C. LINDENII.—See *UROPEDIUM LINDENII*.

C. LINDLEYANUM, *Schomburgk*.—This remarkable species is quite distinct from any other *Cypripede*; the leaves are long and broad, deep green narrowly margined with yellow; the peduncle is about 2 feet high, furnished with several large green boat-shaped bracts; the flowers are densely clothed with hairs, in colour pale nankeen-yellow tinged with green, regularly striped with Indian-red, the mouth of the pouch being densely spotted with the same colour. Flowers in November.—*British Guiana*.

SYN.—*C. Kaieteurum*.

C. LONGIFOLIUM, *Warscz. et Rehb. f.*—This is a very stately plant, somewhat robust in growth, producing a distichous tuft of long strap-shaped dark green carinate leaves, and a many-flowered puberulous scape, furnished with spathaceous lanceolate bracts. The flower spike produces a quantity of flowers, but as far as we have seen but one is fully expanded at a time; the dorsal sepal is ovate lanceolate, pale yellowish-green, faintly streaked with purple, the lower sepal large; the petals are elongate-lanceolate, several inches long, green, with a red marginal band, bordered with white; and the lip is oblong-ovoid with a wide mouth, green, suffused with shining purplish-brown. It is not a very showy plant.—*Central America*; *Chiriqui*.

FIG.—*Bot. Mag.*, t. 5970; *Florist and Pom.*, 1871, p. 120, with fig.; *Gard. Chron.*, 3rd ser., 1890, viii. p. 728, f. 143.

SYN.—*C. Reichenbachianum*; *Selenipedium longifolium*.

C. LOWII, *Lindley*.—A curious and beautiful Orchid of the stemless section. The leaves are oblong-ligulate, slightly notched at the apex, light green. This species produces its flowers on a spike, generally two or more together—sometimes eight or ten on native specimens, but we have never seen so many on cultivated plants. It blooms during the spring and summer, and continues in perfection for two or three months if kept in a cool house. The dorsal sepal is ovate, narrowed to the base, downy outside, pale green with a purplish tinge; the petals are long, spatulate, ciliated, the basal half greenish spotted with purple, wholly purple towards the broader end; and the lip is large, smooth, bluntly oblong, purplish-green, and shining. It grows naturally upon very high trees.—*Borneo*. [For illustration see page 278.]

FIG.—*Gard. Mag. Bot.*, i. p. 297, with tab; *Flore des Serres*, t. 375; *Florist and Pom.*, 1870, p. 109, with fig.; *Ann. de Gand*, 1848, t. 195; *Gard. Chron.*, 3rd ser., 1890, viii. p. 729; f. 144 *Orchid Album*, ix. t. 428.

C. "LUCIE," *Godefroy*.—This hybrid was raised by M. D. Moreau, of Argenteuil, between *C. Lawrenceanum* and *C. ciliolare*, but the first-named parent seems to have predominated; the dorsal sepal is like that species, but not so large, it is covered with a rosy wash.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1892, p. 17 (plate).

C. LUCIENIANUM, *Hort. Belg.*—This new hybrid is said to be the result of a cross of *C. villosum* and *C. oenanthum*. There appears to be some doubt as to the parentage being as stated; it is, however, according to the plate in the *Lindenia*, a showy thing. The petals and lip resemble those of *C. villosum*, but the dorsal sepal is quite distinct, nearly round, heavily blotched with blackish-purple, green at the base, broadly margined with white.—*Garden hybrid*.

FIG.—*Lindenia*, viii. t. 362.



CYPRIPEDIUM LOWII.

(From the *Gardeners' Chronicle*.)

C. MACFARLANEI, *Kränzlin*.—"This very beautiful new hybrid was raised in the nursery of Messrs. F. Sander & Co., St. Albans, and flowered in the month of August in the well-known collection of *Cypripediums* of R. H. Measures, Esq., The Woodlands, Streatham. It is the offspring of *C. calophyllum* and *C. Spicerianum*, the latter being the pollen plant. The new plant has the size and the beautiful upper sepal of the male, but more flat, and not so revolute on the edges. The labellum, and to some extent the staminodium, look perfectly like the corresponding parts in

C. Spicerianum. From the mother plant (*C. calophyllum*) the hybrid has taken the petals, which are more spreading, and the upper margin of which is less waved, and the dark reticulated leaf. The plant has been named in honour of Mr. MacFarlane, the artist" (Dr. Kränzlin in *Gardeners' Chronicle*, 3rd ser., 1891, x. p. 300).—*Garden hybrid*.

✓ **C. MACROCHILUM**, O'Brien.—A hybrid between *C. longifolium* and *Uropedium Lindenii*, which is described by Mr. O'Brien in the *Gardeners' Chronicle* as follows:—"This plant has the usual bright green leaves of the *Selenipedium* section of *Cypripedium*. The upper sepal is creamy-white, slightly tinged with green, and having greenish lines thereon; the lower sepals are similar to the upper. The petals, which resemble those of *C. caudatum*, have purple hairs at the base; they are greenish-white, tinged and streaked with rose-colour, and deepening in hue towards the tips; the staminode has a fringe of purple hairs, and the labellum, which forms the striking feature in the flower, is ivory-white, tinged in places with pale green, and the veinings coloured, and between them tinged with reddish-brown. The labellum is curved forward, and its unfolded lobes are white, beautifully spotted with rose."—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1891, x. p. 343, f. 40.

C. MACROPTERUM, Rehb. f.—A cross between *C. Lowii* and *C. superbiens*, raised in Messrs. J. Veitch & Sons' nurseries. It is a compact and charming hybrid, with persistent, variegated foliage. The scape is terminal and erect, bearing two or more flowers, which, when expanded, measure some 6 inches across; dorsal sepal pale green, veined with green of a deeper hue, which passes into brownish at the base; petals 3 inches long, spirally twisted, yellowish towards the base, spotted with dark purple, and passing wholly into pale purple towards the tips; lip dull brown-purple. It blooms during the months of June and July, and continues several weeks in full beauty.—*Garden hybrid*.

FIG.—*Orchid Album*, ix t. 391.

C. "MADAME BARBY."—The result of a cross between *C. Lawrenceanum* and *C. tonsum*. The dorsal sepal resembles that of the first-named parent in size and colour; petals greenish, suffused with purple, having several purplish spots; lip purplish-brown, greenish at the base.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1892, p. 337.

✓ **C. "MADAME CAPPE,"** Gower.—A cross between *C. Spicerianum* and *C. Harrisianum Dauthierii*. This is an extremely handsome variety, bearing flowers larger than *C. Spicerianum*, and much richer in colour, the lip being bright and showy; the scape is two-flowered, each flower being nearly 5 inches across; dorsal sepal large, broadly ovate, the sides reflexed, white with a patch of green at the base, with lilac-mauve veins, and a broad central streak of crimson; inferior sepal oblong, pale green; petals ligulate, obtuse, deflexed, slightly crimped on the upper edge, green, with a dark central band, the superior half suffused with a reddish-brown hue; pouch more compressed than in *C. Spicerianum*, purplish-mauve, freckled with crimson-lake on the inside; staminode creamy white tinged with lilac, and green centre. Blossoms in the autumn months.—*Garden hybrid*

C. MARMOROPHYLLUM, *Rchb. f.*—A very curious and interesting hybrid, between *C. Hookerae* and *C. barbatum*. Professor Reichenbach describes the leaves as being quite those of *C. Hookerae*. The scape is tall as in that species, purple. The upper sepal has the broad base and transverse shape of that of *C. barbatum*, and near the margin is washed with purple, in the centre with green, all the nerves being green; the petals are bent down, like those of *C. Hookerae*, are more purple, and are bordered with bristles, having two warts on each superior limb; and the lip has the side angles a little more developed than in *C. Hookerae*, the inflexed margins being covered with shining warts. Flowers in winter.—*Garden hybrid*.

C. MARSHALLIANUM, *Rchb. f.*—This is a fine hybrid between *C. venustum*, or its variety *paradinum*, and *C. concolor*; leaves distichous, broadly oblong, obtuse, ground colour light green, mottled with very deep green on the upper side, dull purple beneath, about 6 inches long; dorsal sepals large, broadly ovate, incurved towards the apex, ground colour white, faintly suffused with rosy-purple over the entire surface, and faintly tinged with yellow towards the base, the veins densely dotted with purple; lower sepal smaller, creamy white, dotted in a less degree with purple; petals deflexed, broadly obtuse, coloured and dotted in a similar manner to the dorsal sepal; lip pale yellow, tinged with light green, flushed and dotted with purple on the upper part about the aperture, the interior pale yellow, dotted with purple; staminode yellow, tinged with green, with a purple tinge in the centre.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1887, i. p. 513, f. 99; *Orchid Album*, ix. t. 418.

C. MASSAIANUM, *Weathers*.—"The flowers are of a good size, the upper sepal being pale yellow, with dark purple bands running from the base to apex, and somewhat feathered at the margins; the lower sepal is similar, and the fringed petals are also pale yellow tinged with soft green, and ornamented with rows of blackish-purple blotches; the lip is large and of a crimson colour, with darker-coloured veins, while the staminode is such as to show its relation to both parents—*C. supercilare* and *C. Rothschildianum*. The plant was exhibited at Chiswick, on July 11th, 1893, when it obtained an award of merit, and also at the Royal Horticultural Society's meeting at Westminster on July 25th" (*J. Weathers*, in *Gardeners' Chronicle*).—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiv. p. 267, f. 48.

C. MASTERSIANUM, *Rchb. f.*—This is a very distinct and beautiful species; was introduced from the Malay Archipelago, and is named in honour of Dr. Maxwell T. Masters, F.R.S., the able editor of the *Gardeners' Chronicle*. The dorsal sepal is green, margined with white, petals horizontal, reddish-purple; upper halves finely spotted with dark purple; lower halves greenish towards the base, lip deep flesh colour, yellowish towards the top; staminode greenish-brown margined with yellow.—*Malay Archipelago: Java*.

FIG.—*Lindenia*, iv. t. 159; *Orchid Review*, ii. p. 17, f. 4.

C. MAYNARDI, *Rolfe*.—"A hybrid raised from *C. purpuratum*, fertilised with the pollen of *C. Spicerianum*, between which it is quite intermediate in general character. The leaves are light green, marked with darker green



CYPRIFEDIUM MEASURESIANUM.

blotches, 4 to 6 inches long by $1\frac{1}{4}$ to $1\frac{1}{2}$ inch broad; scape rather short; dorsal sepal suborbicular, the lower part reflexed, apex acute and inflexed at the sides, white, with a broad purple mid vein, and about three short rosy nerves on either side, base pale green; petals linear oblong, about 2 inches long, pale green at base, with numerous small brown spots, light lilac-purple above, the superior



CYPRIPEDIUM MASSATANUM.

(From the *Gardeners' Chronicle*.)

margin undulate and ciliate; lip light brownish-purple, with darker nerves, paler behind, the infolded side lobes with some purple-brown spots; staminode obcordately reniform, suffused with purple and reticulated with green nerves in the centre" (R. A. Rolfe, in *Reichenbachia*).—Garden hybrid.

FIG.—*Reichenbachia*, 2nd ser., i. t. 43 (right fig.).

C. MEASURESIANUM, *Williams*.—This distinct and splendid hybrid is a cross between *C. villosum* and *C. renustum*, and was named in honour of R. H. Measures, Esq. It is of compact growth, with foliage about 6 to 8 inches in length, of a shining dark green colour, the under side being marked with purple; the flower scape is purple and hairy, as in *C. renustum*; dorsal sepal ovate lanceolate, yellow margined with white, and veined with yellowish-green; petals similar in shape to *C. villosum*, of a light brown-purple, changing to bright orange, suffused on the upper half with purple, and possessing the same varnished appearance, which is such a marked feature in that species; lip large, orange, tinted and veined with purplish-brown. It blooms during the winter, producing its blossoms very freely, which continue in perfection two and three months, a fact that makes it doubly useful, as at this period of the year all flowers are in great request.—*Garden hybrid*.

FIG.—*Orchid Album*, vii. t. 304; *Journ. of Hort.*, 1883. xvii. p. 47, f. 5.

C. MEIRAX, *Rchb. f.*—A distinct and beautiful small-growing hybrid, raised by R. Warner, Esq., Broomfield, Chelmsford. The leaves are oblong-lanceolate, acute, faintly mottled with transverse markings above, and of a wine-purple beneath. The flowers are medium-sized, on dark purple hairy scapes; the dorsal sepal is broad ovate, ciliate at the base, bluish-white with green and purple stripes or nerves; the petals are linear-oblong, ciliate, purplish-crimson with green nerves; and the glossy lip is yellowish-green in front, veined and barred with crimson-purple, the point margined with deep wine-purple. It blooms during the winter and spring months, as it completes its growth, and the flowers last six weeks or more in perfection.—*Garden hybrid*.

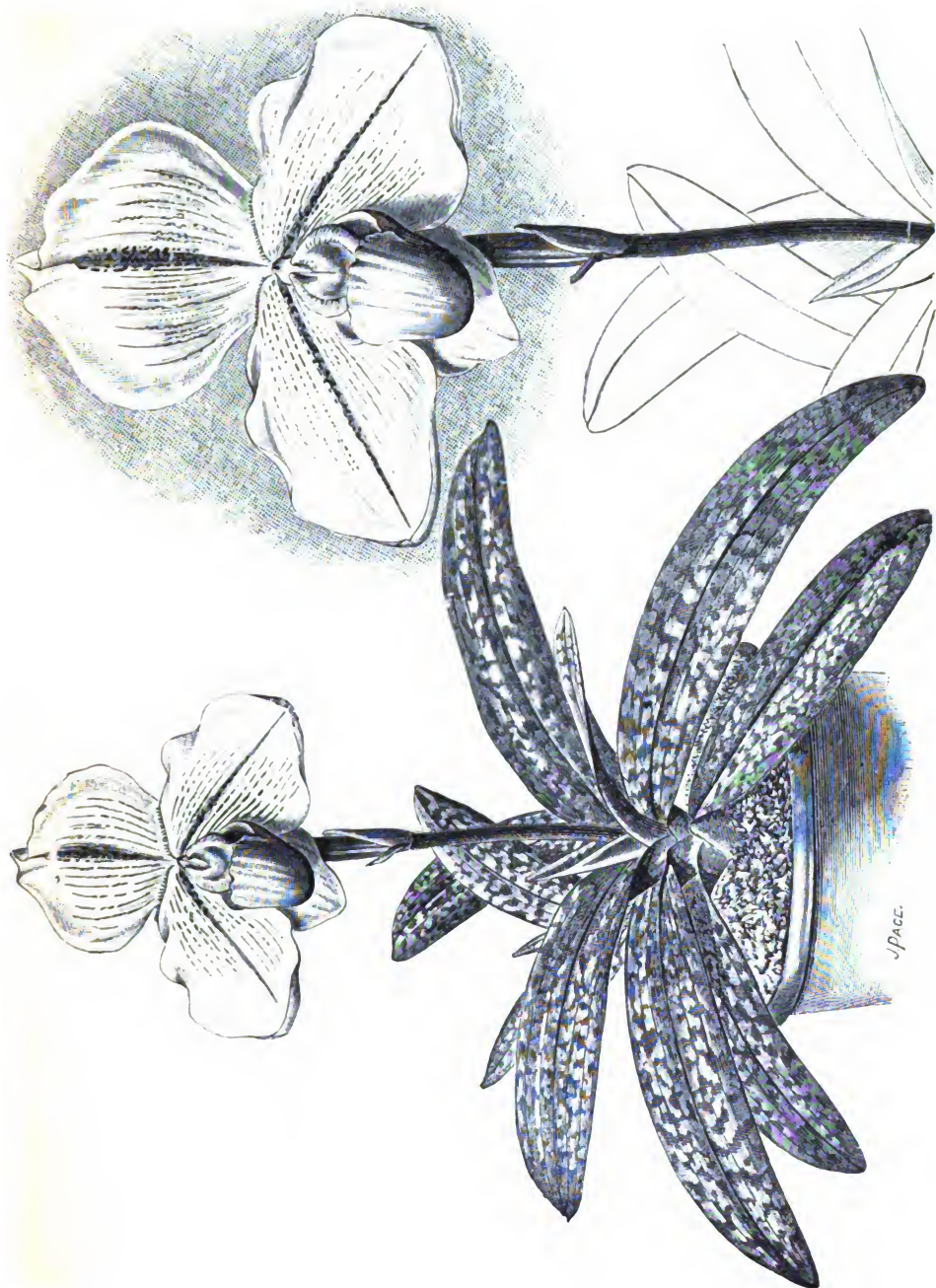
FIG.—*Orchid Album*, ii. t. 95.

C. MELANOPHTHALMUM, *Rchb. f.*—One of Mr. R. Warner's fine hybrids. It is a free-growing, free-blooming variety of the dwarf distichous-leaved group, the leaves in this case being of a pale dull green with coarse elongate reticulations of a darker green. The flowers are medium-sized, with green scapes clothed with purplish down, the dorsal sepal being whitish flushed with Indian purple towards the base, and having green nerves; the petals are glossy, linear-oblong, acute, the upper half Indian purple with green nerves, the lower half a much paler tint of the same colour, and having several blackish wart-like spots on the base and margins, which latter are strongly ciliated. It flowers during the winter and spring months.—*Garden hybrid*.

FIG.—*Orchid Album*, iii. t. 109.

C. MEMORIA MOENSI, *L. Lind.*—A fine hybrid raised by the late Mr. J. Moens, of Lede. The parentage is uncertain, but judging from the plate in the *Lindenia* we would say it is a cross between *C. Spicerianum* and *C. hirsutissimum*. The dorsal sepal is very large, obovate, of an intense rosy-purple, with a broad median bar of deeper purple, and a narrow white border; the petals are rosy-purple with a dark purple median line, and many lines of spots of a lighter purple, green at the margins near the base, the upper margin undulate and ciliate; pouch wide, shining rosy-purple.—*Garden hybrid*.

FIG.—*Lindenia*, viii. t. 361.



CYPRIPEDIUM MICROCHILUM.
(From Messrs. J. Veitch & Sons' Catalogue.)

C. MICROCHILUM, *Rehb. f.*—A very interesting and pretty hybrid between *C. niveum* and *C. Druryi*. The plant is of compact dwarf habit, with ligulate recurving finely tessellated leaves. The flowers are broader than those of *C. niveum*, and have the upper sepal roundish, apiculate, white with a central spotted crimson-purple bar, and slight indications of other lines, several dark cinnamon stripes being evident outside; the petals are broad roundish oblong, white with a dark crimson-purple stripe down the centre, and several lines of small spots on each side; and the lip is very small, laterally compressed, white veined with pale green. Raised by Mr. Seden.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1884, p. 19, with fig.; *Lindenia*, ii. t. 50; *Veitch's Man. Orch. Pl.*, iv. p. 92.

C. MINERVA, *Rolfe*.—"A new hybrid *Cypripedium* from R. H. Measures, Esq., of the Woodlands, Streatham, raised by crossing *C. venustum* and *C. Harrisianum elegans*, the former being the seed parent. This particular combination does not appear to have been effected before, and I therefore propose to name it as above. Like most hybrids, it is tolerably intermediate in character, though the influence of *C. venustum* is perhaps the most strongly marked. The sepals are much as in *C. venustum*, but the upper one has a band of purple in the centre and a few other traces of the same colour near the base; the petals, lip, and staminode also closely approach *C. venustum* in shape; the petals are of a pleasing shade of light maroon-purple, with greenish nerves, the middle nerve very dark purple, as are also the lateral nerves of the superior half of each petal near the base; the lip is dark maroon-purple in front, the nerves closely resembling those of *C. venustum* in character, the spots on the side lobes are large, and the markings of the inside of the lip very beautiful; the staminode is light brownish-purple, a little marbled with a paler shade, and the whole is of a very shining appearance. The various modifications mentioned are, of course, in the direction of *C. Harrisianum*, itself a hybrid between *C. barbatum* and *C. villosum*, so that three distinct species are concerned in the parentage of the present novelty" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1889, vi. p. 464).—*Garden hybrid*.

— **C. MINOS**, *Hort. Veitch*.—By crossing *C. Spicerianum* with *C. Arthurianum* a beautiful hybrid was obtained by Messrs. J. Veitch & Sons, and exhibited by them before the Royal Horticultural Society on November 28th, 1893. The dorsal sepal is pure white, shaded with purple at the base; petals yellow, tinged with brown, in shape resembling those of *C. Arthurianum*. Lip dull yellow, shaded with brown.—*Garden hybrid*.

C. MOENSIANUM.—See *C. ARGUS MOENSII*.

— **C. MORGANIAE**, *Rehb. f.*—Without doubt this is the finest hybrid *Cypripede* yet raised; it is a cross between *C. superbiens* and *C. Stonei*, and at first sight much resembles the rare *C. Stonei platytaenium*. The ligulate obscurely tessellated leaves are in the way of those of *C. Stonei*. The scapes are generally three-flowered. The dorsal sepal is elliptic apiculate, whitish tinged with red, and having dark red veins; the petals broad, ligulate, whitish sulphur-colour with numerous dark brownish-purple spots and blotches inside, while the lip is similar to that of *C. superbiens*, but longer, brownish-mauve above and yellowish-

white below. This novelty was raised by Mr. Seden in Messrs. Veitch's Nursery, and is named in honour of the late Mrs. Mary Morgan, of New York, an enthusiastic collector of Orchids. There appears to be no fixed period for the flowering of this hybrid, for we ourselves have had it in bloom nearly every month in the year. This plant should be in every collection.—*Garden hybrid*.

FIG.—*The Garden*, 1893, xxiii. p. 58, t. 372; *Gard. Chron.*, N.S., 1886, xxvi. p. 241. f. 49; *Id.*, 3rd ser., 1890, vii. p. 545, f. 85, and March 1 Supplement; *Orchid Album*, vii. t. 313; *Revue Hort. Belge*, 1885, p. 217; *Journ. of Hort.*, 1887, xiv. p. 233, f. 42; *Veitch's Man. Orch. Pl.*, iv. p. 92; *L'ill. Hort.*, 1887, xxxiv. p. 16, t. 5.

C. MORGANIAE BURFORDIENSE, *Sander*.—A variety which is said to differ from the type in having larger and richly-coloured flowers, with somewhat shorter, broader, and more heavily spotted petals. It is the result of a cross between fine varieties of *C. superbiens* and *C. Stonei*.—*Garden hybrid*.

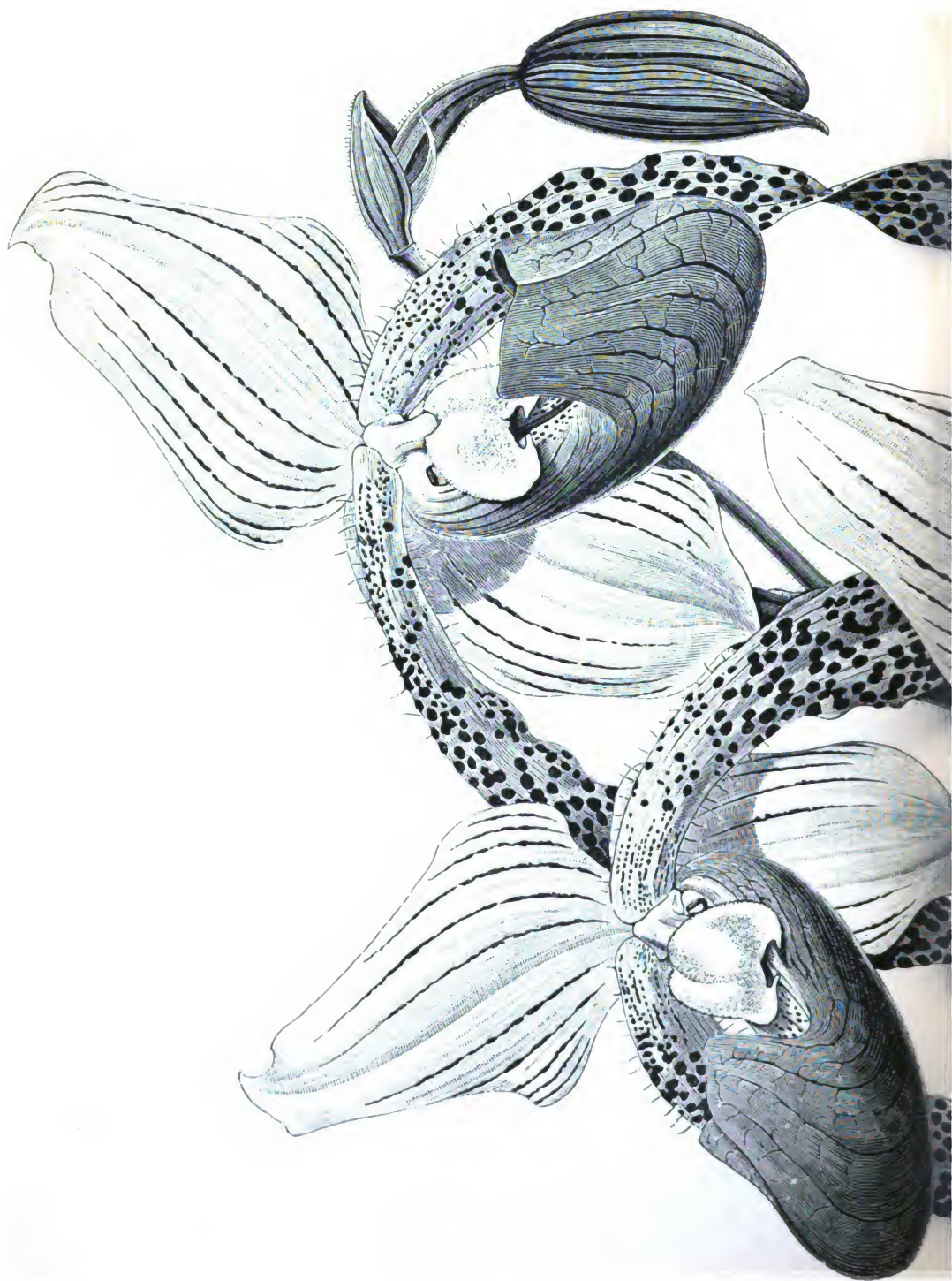
FIG.—*Reichenbachia*, 2nd ser., i. t. 1; *Orchid Review*, i. p. 41, f. 3.

C. "MRS. CANHAM," *Rolfe*.—This was obtained from the same source as *C. "Charles Canham,"* but is the inverted cross. "Leaves 6 to 9 inches long, faintly tessellated; flowers among the largest in the group of *C. villosum* hybrids; upper sepal brownish-purple at the base passing into pale green upwards, and with a broad white margin, veins deep brown-purple at the base passing into green upwards; lower sepal white with green veins; petals deflexed, ciliate, and undulate at the margins, mid-vein blackish-purple, the superior half brownish rose-purple with green veins, inferior half paler; lip yellowish-brown with brown venation; staminode nearly as in *C. superbiens*."—*Garden hybrid*.

FIG.—*Veitch's Man. Orch. Pl.*, iv. p. 93.

C. "MURIEL HOLLINGTON," *Rolfe*.—This hybrid was raised by Mr. Ayling, gardener to A. J. Hollington, Esq., Enfield, and is described by Mr. Rolfe as follows:—"Leaves linear-oblong, obtuse, $2\frac{1}{2}$ to 4 inches long, $\frac{3}{4}$ to 1 inch broad, light green, mottled with numerous darker blotches, paler underneath; scape 6 inches high; dorsal sepal nearly orbicular, $1\frac{3}{4}$ inch long, by $1\frac{1}{2}$ inch wide; apex folded as in *C. insigne*, white; disk light yellowish-green, with fifteen light delicate purple nerves, the seven centre ones interrupted in small spots, the broad white margin without markings of any kind; petals obovate-oblong, obtuse, 2 inches long, 1 inch broad, white, with some purple hairs at base, upper half with six purple veins, and with similar transverse oblique connecting veinlets, lower half scarcely veined; lip much like *C. niveum*, white, veined with lightest purple on sides only; staminode also like *C. niveum*, white, with a little yellow in centre, and a few green nerves on either side; probably derived from *C. niveum* and *C. insigne*" (*Gardeners' Chronicle*, 3rd ser., 1891, ix., p. 10).—*Garden hybrid*.

C. "MURILLO," *Desbois*.—"This is a hybrid raised by Mr. Charles Vuylsteke, nurseryman, Loochristy, near Ghent, from *C. Bozallii atratum* by the pollen of *C. Argus*, which it much resembles; the ground colour of the dorsal sepal is sea-green, much spotted with shining black at the base, the upper part of a dark green colour, with a wide creamy-white border; the inferior sepal is very long,





CYPRIPEDIUM MORGANIAE.
(From the *Gardener's Chronicle*.)

greenish-white, with bands of clear green, dotted with sepia; petals horizontal gracefully curved, brownish-claret coloured above, much dotted with dark chestnut, with jet black hairs, the lower part has a ground colour of greenish-white, streaked with a dark green, and spotted with reddish-chestnut; the lip is long, blood-red on the upper surface, olive-green with a rosy flush below; staminode flesh-coloured, under surface of the lobes olive, in the centre an excrescence of brilliant green; floral scape about 15 inches high, dark brown; bract green, dotted with black at the base; the foliage is fine, nearly 2 inches wide by $9\frac{1}{2}$ inches long, with very serried hieroglyphic markings; it flowered first in December, 1892, is a sturdy hybrid and of good habit" (F. Desbois, in *Gardeners' Chronicle*, 3rd ser., 1893, xiv. p. 162).—*Garden hybrid*.

C. NEOGUINIENSE.—See *C. ROTHSCILDIANUM*.

C. NIOBE, Rolfe.—A dwarf hybrid plant obtained between *C. Spicerianum* and *C. Fairrieianum*. The leaves are oblong, acute, some 5 or 6 inches in length, and a little more than an inch in breadth, dark green above, paler beneath; peduncle one-flowered; flowers 3 inches across; dorsal sepal broadly ovate, white flushed with flesh colour, having a broad central streak of rich bright brown, with a small patch of apple-green at the base, features that stamp it with the undoubted parentage of *C. Spicerianum*, and having on either side some thinner streaks of light magenta running up through it, but all ending below the margin, thus leaving a border of pure white, on the reverse side the streaks are of a deep magenta-purple; lower sepal smaller, creamy-white, faintly streaked with pale green; petals linear oblong, of a uniform width throughout, deflexed, the points recurved like *C. Fairrieianum*, ground colour soft apple-green, having a broad central stripe of chocolate and a few dotted lines of dark brown, margins beautifully undulated, broadly bordered with dark brown, and fringed with black hairs; the pouch-like lip medium size, pale green, flushed with bright brown in front, the veins green, passing into pale green beneath; staminode sub-orbicular, deeply indented, streaked with green in the centre, having a lunate rosy border in front with white margin.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1889, xix. p. 527, f. 67; *The Garden*, 1891, xxxix. p. 482 (plate); *L'Orchidophile*, 1892, p. 81 (plate); *Orchid Album*, x. t. 438; *Orchid Review*, i. p. 7, f. 1.

SYN.—*C. Gaskellianum*, Gower.

C. NITENS, Rehb. f.—A hybrid raised between *C. villosum* and *C. insigne Maulei*. According to Professor Reichenbach, it is theoretically a very valuable addition to the rich series of *Cypripediums*, and practically it may be regarded as an improved edition of *C. insigne Maulei*. It has the leaves of *C. villosum*, dark green; the dorsal sepal is quite as in *Maulei*, but far larger; the petals are ligulate, wavy, light brown, and ochre colour, reticulate, and very glossy, and the lip has a narrow sub-conical sac, with long lateral horns as in *C. villosum*.—*Garden hybrid*.

FIG.—*Lindenia*, v. t. 223.

C. NITENS SUPERBUM, Hort.—A superior variety in colour and size to the type.

C. NITIDISSIMUM, *Rchb. f.*—This is a hybrid raised by N. C. Cookson, Esq., from *C. caudatum* Warcewiczii, and *C. conchiferum*. Mr. Rolfe describes it in the *Reichenbachia* as follows:—"It is tolerably intermediate in character, though the general habit of the plant, especially in the leaves and bracts, strongly resembles that of the mother plant. The flowers point somewhat in the same direction, though the petals do not attain to nearly so great a length. Ovary 4 inches long; dorsal sepal $4\frac{1}{2}$ to 5 inches long, the lower pair $3\frac{1}{2}$ to 4 inches long, light ochre with yellowish-brown nerves; petals 9 to $10\frac{1}{2}$ inches long, yellowish on basal part, rosy-red on centre and apex; lip 2 to $2\frac{1}{4}$ inches long, about intermediate in shape and colour; staminode also intermediate."—*Garden hybrid*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 27.

SYN.—*Sclenipedium nitidissimum*.

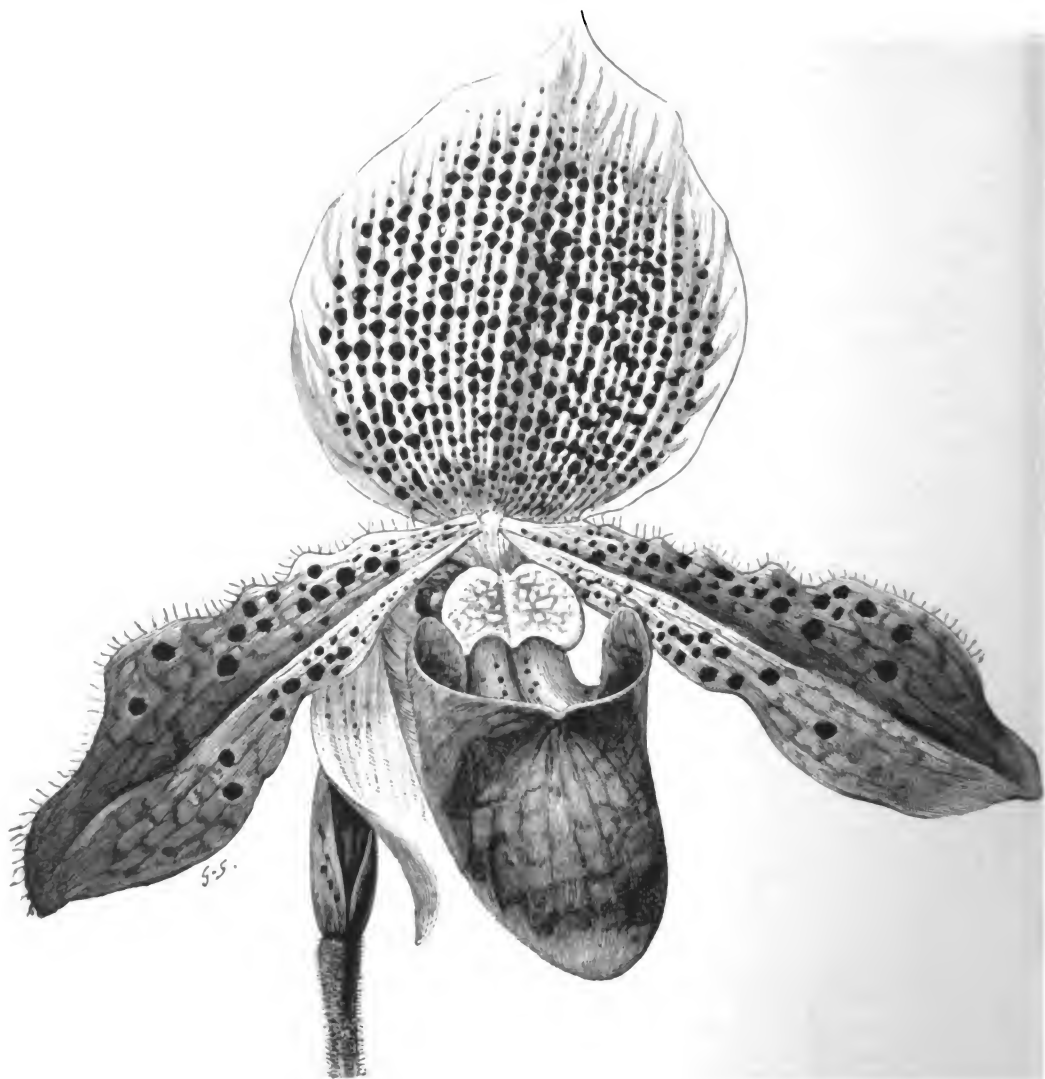
C. NIVEUM, *Rchb. f.*—A lovely dwarf-growing species, with close-set distichous oblong acute or emarginate leaves, which are purple beneath and dull green above, marked with pallid oblong spots. The scapes are about 6 inches high, slender, purplish, and downy. The flowers are satiny-white inside, speckled on the petals with a few minute dots of purple, and having the exterior of the suborbicular cuspidate dorsal sepal streaked with bright red at the back; the lip is exactly ovoid, with the mouth contracted. It blooms during summer, and sometimes produces two flowers on a spike. Every one who sees it is charmed with it, as it is very free-blooming. A grand plant for exhibition purposes.—*Malayan Archipelago: Tumbelan Islands*.

FIG.—*Bot. Mag.*, t. 5922; *L'Ill. Hort.*, 3rd ser., t. 83; *Floral Mag.*, t. 543; *Jennings, Orch.*, t. 28; *Gard. Chron.*, N.S., xix. p. 19, f. 3, front figure; *Journ. of Hort.*, 2nd ser., xx. 339, with figs; *The Garden*, ix. p. 524, t. 23; *Florist and Pom.*, 1871, pp. 156-7, with figs; *Revue Hort. Belge*, 1886, p. 241; *Reichenbachia*, i. t. 34; *Veitch's Man. Orch. Pl.*, iv. p. 40.

C. "NORTHUMBRIAN," *N. E. Brown*.—This hybrid was obtained from *C. calophyllum*, fertilised with the pollen of *C. insigne* Maulei, and was raised by D. O. Drewitt, Esq. The leaves are similar to those of *C. insigne*, but differ in being faintly marbled with a dark-green venation; the dorsal sepal is elliptic, light apple-green covered with brownish-purple spots, the upper portion and margin being pure white; the petals are similar to those of *C. Crossianum*, light brownish-purple, passing to yellowish-purple at the tips; the lip is pointed similar to that of *C. insigne*.—*Garden hybrid*.

C. NUMA, *Rolfe*.—A cross between *C. Lawrenceanum* and *C. Stonei*, and was raised by Mr. Seden in Messrs. J. Veitch & Sons' nurseries. The leaves appear to favour the first-named parent. Mr. Rolfe says in the *Gardeners' Chronicle*, 1890, that "the flower has the general aspect of *C. Stonei*, but the dorsal sepal is less abruptly acuminate, and bears eleven irregular stripes of purple-brown. The petals are not twisted, and more spreading. The lip almost uniformly light purple-brown, not distinctly reticulated."—*Garden hybrid*.

C. OBSCURUM.—See *C. ASHBURTONIAE*.



CYPRIPEDIUM OENO-SUPERBIENS
(From the *Journal of Horticulture*.)

C. OENANTHUM, *Rchb. f.*—This plant is the result of a cross between *C. insigne Maulei* and *C. Harrisianum*. The leaves are ligulate, tri-dentate at the apex, dark green; the scape is covered with dark hairs, and bears a solitary medium-sized flower; the dorsal sepal is broad, whitish-green at the base, with crimson-purple nerves, marked, as in *C. insigne Maulei*, with rows of crimson-purple coloured blotches; the petals are port-wine colour, flushed with violet, yellowish, with dark blotches towards the base; the lip also is port-wine colour. Raised by Mr. Seden.—*Garden hybrid*.

FIG.—*Orchid Album*, viii. t. 379.

C. OENANTHUM SUPERBUM.—This fine variety was raised by Messrs. J. Veitch & Sons, and resulted from the reversed cross of the preceding. The leaves are distichous, ligulate, and deep green, faintly tessellated; scape erect, clothed with a tomentum of dark purplish hairs, and bearing a single large and highly-coloured flower on the apex; dorsal sepal deep vinous red at the base and in the centre, through which run numerous spotted lines of rosy purple, the margins and upper portion passing into bright purplish-mauve, the outer margin white; lower sepal greenish-white, spotted on the veins with blackish-purple; petals deep yellowish-brown, darkest on the upper half; lip large, broadly obtuse, rich deep port-wine colour on the exterior, yellowish within, freely dotted with reddish-purple.—*Garden hybrid*.

FIG.—*Lindenia*, i. t. 33; *Revue Hort. Belge*, 1885, p. 233; *Reichenbachia*, i. t. 38; *Journ. of Hort.*, 1886, xii. p. 62, f. 11; *Veitch's Man. Orch. Pl.*, iv. p. 93; *Orchid Album*, ix. t. 420.

C. OENONE, *Rolfe*.—This hybrid is the result of a cross between *C. Hookerae* and *C. superbiana*, and was first raised in Messrs. Sander & Co.'s nurseries at St. Albans, and subsequently by Mr. Alfred Bleu, of Paris, who named it *C. Hookero-superbiana*, but as we believe the former name to be that of which the first description was given, the latter will have to be relegated to the synonymy. The leaves are much in the way of *C. Hookerae*. "Dorsal sepal is ovate, acute, light green in the centre and base, suffused with pale purple on both sides, and nearly white on the margin; the nerves of a green colour and about twenty-three in number; the petals are lanceolate oblong, of a light green colour below passing into rosy-purple in the distal third, densely spotted with purple-brown, except at the extreme apex, the margin ciliate and a little crenulate; the lip is much like that of *C. superbiana*, and is brownish-purple in front, paler and greener behind" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, vii., p. 260). Flowers in late autumn.—*Garden hybrid*.

SYN.—*C. Hookero-superbiana*.

C. OENO-SUPERBIENS, *Hort. Lawrence*.—This beautiful hybrid was raised and exhibited by Sir Trevor Lawrence, Bart., before the Royal Horticultural Society, on September 12th, 1893. We had not the good fortune to see this splendid novelty, but a glance at our illustration and the following description from the *Journal of Horticulture*, will give our readers an idea of its merits:—"The prevailing colour is a brownish-red, this suffusing the petals and lip; the former are bold and spreading, the latter being somewhat pointed; the dorsal sepal is broad and imposing, it is heavily lined with chocolate dots and suffused with rose margined with white."—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1813, xxvii. p. 269, f. 33.

C. ORPHANUM, *Rehb. f.*—The parentage of this hybrid is not known, but it is probably a cross between *C. Druryi* and *C. barbatum*. It was raised by Messrs. Veitch & Sons. Leaves distichous, some 5 to 6 inches in length and $1\frac{1}{2}$ inch to 2 inches in breadth, channelled above, carinate beneath, light green, netted and marmorated with dark olive-green on the upper side, pale green below; scape terminal, erect, one-flowered, deep brownish-purple, slightly hirsute, the bract being very short; flowers large and handsome; dorsal sepal ovate, white, tinged in the centre with bright emerald-green, and on the lateral margins with rosy-purple; it has a brownish-purple median band, with numerous equidistant smaller ones of the same hue; lower sepal white, tinged with pale green, with darker green veins; petals greenish-purple, ivory-white on the borders, and a broad brownish-purple median stripe, in addition the petals are slightly freckled towards the base with black dots, and the margin ciliated with black hairs; lip obtusely ovate, deep rosy-purple, pale beneath.—*Garden hybrid*.

FIG.—*Lindenia*, v. t. 206; *Journ. of Hort.*, 1887, xv. p. 135, f. 16; *Orchid Album*, x. t. 455.

C. ORPHEUS, *Rolfe*.—This cross between *C. renustum* and *C. callosum* is described by Mr. Rolfe in the *Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 39, as follows:—"Leaves pale grey-green, tessellated with darker green blotches, about 6 inches long by $1\frac{1}{2}$ to $1\frac{3}{4}$ inch wide; dorsal sepal sub-orbicular, with acute apex, $1\frac{1}{2}$ inch long by $1\frac{1}{2}$ inch wide, whitish-green, with twenty-three green nerves, lower united sepals ovate, acute, 1 inch long, similar to dorsal one, but with only six nerves; petals ligulate, sub-deflexed, slightly falcate near apex, ciliate, basal half whitish-green, with eight green nerves, passing into light rosy-purple in apical half, and with four black warts near the middle of the outer margin; lip sub-compressed, $1\frac{1}{2}$ inch long, dull deep maroon in front, paler behind, infolded side lobes with a few light maroon wart-like spots on a pale ground; staminode broadly hippocrepiform, apex tri-cuspidate, pale green with olive-green reticulated veins in centre." It was raised in the nurseries of Messrs. Sander & Co.—*Garden hybrid*.

C. ORESTES, *Veitch*.—A cross of doubtful parentage, which has not been seen by us. "Upper sepal pale apple-green, with a broad white border, and large red-brown spots along the veins; lower sepal pale green; petals brownish-purple with a darker mid-vein, pale yellow green at the base; lip bright vinous purple shaded with brown."—*Garden hybrid*.

✓ **C. OSBORNEI**, *Hort*.—This fine showy hybrid was raised by Mr. Osborne, when gardener to the late H. J. Buchan, Esq., Southampton, and is a cross between *C. Harrisianum superbum* and *C. Spicerianum*. It has large flowers. "Lip crimson and reticulated; petals of the same hue, generally, but with a deeper median line, the edges green; the dorsal sepal is white in the upper part and streaked with crimson at the base." Flowers in winter.—*Garden hybrid*.

C. PAGEANUM, *Rehb. f.*—A hybrid raised by Mr. Page, of Bougival, near Paris. It is a cross between *C. superbiens* and *C. Hookerae*. "Leaves nearly glaucous, with dark reticulations; the red hairy peduncle is one-flowered; upper sepal elliptical, acute, with twenty-three green veins, a few of which are reddish at the

apex; lower sepal much smaller, oblong acute, with green veins, two of which are red at the apex; petals deflexed, ligulate acute, ciliate, with green veins, on a whitish ground that turns in the light to a reddish colour in the anterior third, there are numerous Indian purple spots on the basilar and median portions; lip in the way of that of *C. superbiana*, but narrower, two-horned at the mouth of the sac, dark brown. Flowers during the summer months" (Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 264).—*Garden hybrid*.

C. PARDINUM, *Rchb. f.*—A beautiful Lady's Slipper of the stemless tessellated set; the leaves are ligulate, mottled with various shades of green on the upper side, purplish beneath; the flowers are rather large, and from two to three are produced upon a spike; the dorsal sepal is white striped with bright green; the petals are oblong ligulate, acute, the lower portion yellowish-green, spotted with purplish-black warts, the upper end of a coppery reddish-purple, the edges fringed with fine hairs; and the lip pale yellow with green veins. It bears some resemblance to *C. venustum*.—*Assam*.

FIG.—*Floral Mag.*, 2nd ser., t. 51.

C. PARIS, *Rolfe*.—The parentage of this hybrid is not known with certainty, but it is stated that *C. bellatulum* was the seed parent, which we are inclined to believe unhesitatingly, while the pollen parent is stated to be *C. Stonei*. The plant was bought by R. H. Measures, Esq., among a batch of seedlings. The flowers are a creamy-yellow, the dorsal sepal flushed at the sides with purple, and veined with maroon-purple; the petals purplish at the extremities, spotted with maroon-purple.—*Garden hybrid*.

FIG.—*Orchid Review*, i. p. 83, f. 6.

C. PARISHII, *Rchb. f.*—A very distinct and noble-looking plant, with a habit of growth like that of *C. philippinense*. The leaves are distichous, broadly lineariform, leathery, the apex obliquely obtuse, dark green above, paler below; the flower spike, bearing from three to six large flowers, is stout, often 2 feet high, and hairy; the flowers have ovate pale green and greenish straw-coloured sepals, and drooping twisted petals 4 to 5 inches long, green with marginal purple hairy warts at the base, the upper two-thirds deep purple with an obtuse ciliated apex; lip green stained with purple. It should be grown in the East Indian house.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5791; *Orchid Album*, ii. t. 86; *Gard. Chron.*, 1869, p. 814, with fig.

C. PAVONINUM, *Rchb. f.*—This hybrid was raised by D. O. Drewitt, Esq., and is a cross between *C. venustum* and *C. Boxallii*. The dorsal sepal is light greenish bordered with white and veined with brown, yellowish at the base, where there are some blackish blotches; petals purplish-brown in the upper halves, yellowish in the lower halves, with some brown spots of various sizes; lip like that of *C. venustum*.—*Garden hybrid*.

C. PEARCEL.—See *C. CARICINUM*.

C. PEETERSIANUM.—See *C. SELLIGERUM PEETERSIANUM*.

C. PENELAUS, *Veitch*.—This handsome hybrid is described in the *Journal of Horticulture* as follows:—"One of the finest hybrid *Cypripediums* raised during the past year or two was that exhibited by Messrs. James Veitch & Sons, at the meeting of the R. H. S. on Jan. 17th, 1893, under the name of *C. Penelaus*. It was the result of a cross between the distinct variety of *C. caudatum* named (*Uropedium*) *Lindeni*, with its long, peculiar lip, and the well-known *C. calurum*, the former being the pollen and the latter the seed parent. Their union was a happy idea on the part of the hybridiser, for the result could hardly fail to be distinct and interesting, if not beautiful. *C. Penelaus* is all three; one of the most remarkable features of a noteworthy flower is the lip, which does not follow the peculiar structure of *C. caudatum* (*Uropedium*) *Lindeni*, but is large, full, and massive, in colour a bright greyish-rose; the dorsal sepal is long, narrow, and pointed, greenish-yellow in hue; the petals are extremely beautiful, they are long, drooping, and twisted, soft rosy-pink in colour, and impart a most graceful appearance to the flower. It will be gathered that the colouring does not partake of the 'harmony in green and brown' type, but rather classes it with the select number of richer coloured forms, of which *C. Sedeni candidulum* is one of the most familiar examples. The new hybrid has, however, a much finer flower than that favourite *Cypripede* can boast."—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvi. p. 319, f. 45.

C. PETRI.—See *C. DAYANUM*.

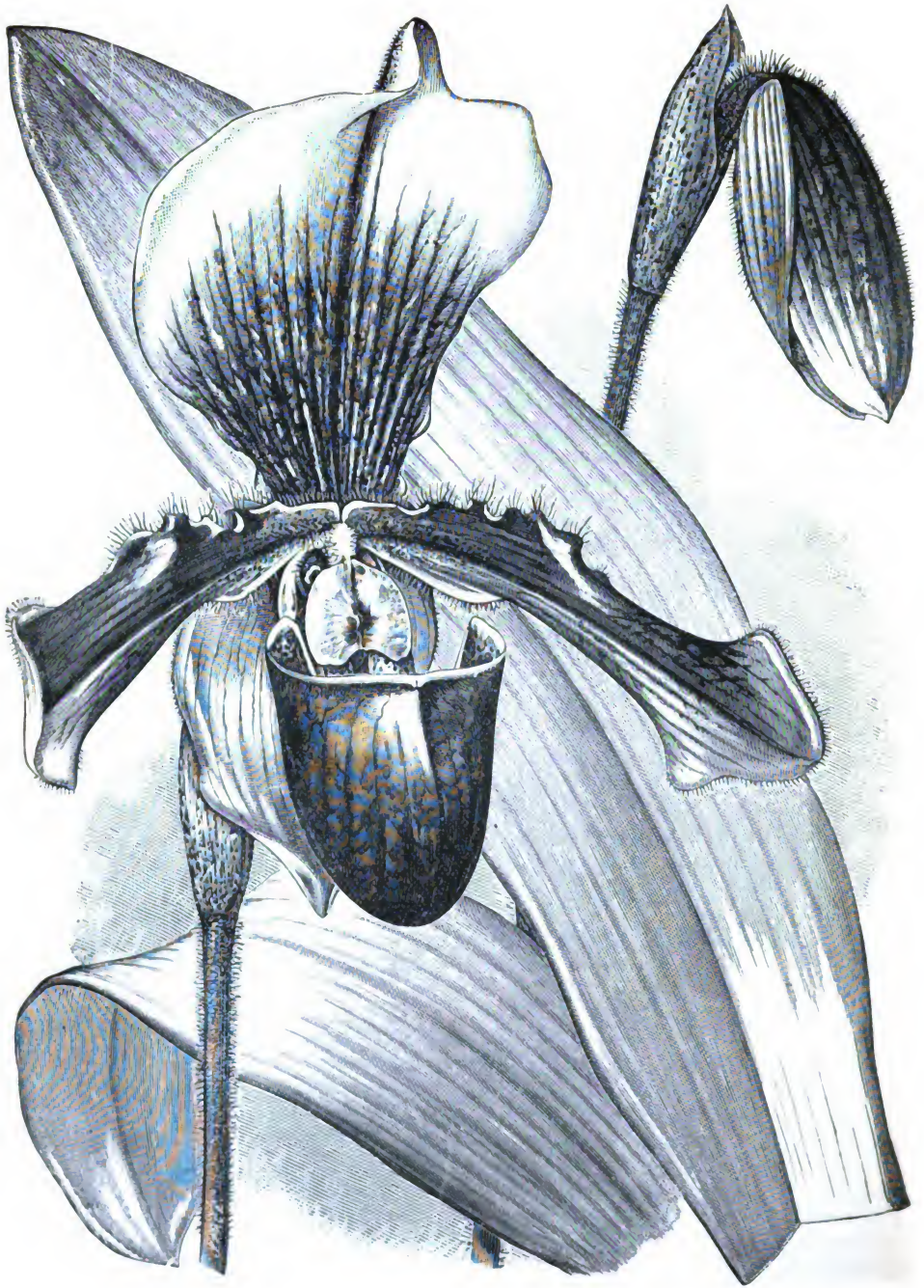
C. PHILIPPINENSE, *Rchb. f.*—This grand species, which is better known in gardens by its English synonym, *C. laevigatum*, was discovered by the late Mr. J. G. Veitch growing upon the roots of *Vanda Batemanni*; it bloomed for the first time in this country in the spring of 1865. The long thick distichous oblong-ligulate or sword-shaped leaves have a polished surface; the flower scape is tall, hairy, bearing three or four large showy flowers; the dorsal sepal is hairy externally, broadly ovate, white heavily striped with purple; the petals are 5 or 6 inches long, narrow, tapering, greenish streaked with brown at the base, the margins crenulate with dark hairy glandular spots, the anterior parts chocolate and much twisted; the lip is small, dull greenish-yellow.—*Philippine Islands*.

FIG.—*Bot. Mag.*, t. 5508; *Batem. Second Cent. Orch. Pl.*, t. 101; *Flora des Serres*, tt. 1760-1761; *Belg. Hort.*, 1867, t. 6; *Floral Mag.*, t. 298; *Gard. Chron.*, 1865, p. 914, f. a; *Revue Hort. Belge*, 1881, p. 121; *Veitch Man. Orch. Pl.*, iv. p. 43.

SYN.—*C. laevigatum*.

C. PICTURATUM, *Hort. Lawrence*.—This is believed to be a cross between *C. Spicerianum* and *C. superbiens*. "There is a distinct trace of *C. Spicerianum* in the dorsal sepal, and the petals remind one of *C. superbiens*; they have a flush of dull magenta on the upper half, the other part green, spotted with lake; lip dull rose." It was raised by Sir Trevor Lawrence, Bart.—*Garden hybrid*.

C. PITCHERIANUM, *Rchb. f.*—This handsome hybrid is not only superior to many in colour but also in size. It is, according to Professor Reichenbach, "a cross between *C. Harrisianum superbum* and *C. Spicerianum*, and it was raised by Norman C. Cookson, Esq. The leaves have the shape of those of *C. Harrisianum*, but they appear to be shorter as a rule, light green on both sides, and above there are those dark green broken hiero-



CYPRIPEDIUM PITCHERIANUM WILLIAMS' VARIETY.

glyphic markings which are usual in the *venustum* group; the peduncle is strong and stiff, slightly hairy, Indian-purple in colour; the upper rounded apiculate sepal is differently coloured on the inside and on the outside to *C. Spicerianum*, although the mid-line is Indian-purple on both sides; inside it has white borders and a white zone descending from the apex toward the inside of the median line, the heritage of *C. Spicerianum*; there are some green nerves passing from the base towards the middle, and which are partly covered by dense Indian-purple spots and lines, a large area on each side is suffused with a kind of purple; the outside is very easily described. It has three transverse zones, an apicular white one, a median purple, the widest of the three, and a basilar green one; this is quite novel. The lower sepals are of course connate, they are elliptical acute, shorter than the lip, light green; the oblong, blunt, ciliate petals are divided by an Indian-purple mid-line into an upper light purple-brown portion, only greenish at the very base, and an inferior light green portion; numerous lines, consisting of Indian-purple spots, extend from the middle to the base. The lip itself has a very blunt sac, and its anterior, prominent part is not very deep, blunt, horned, (angled), apiculate in the middle, reddish-brown with a yellowish inferior part."—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1889, v. p. 73, f. 10.

C. PITCHERIANUM, *Williams' Variety*.—A splendid hybrid, the result of a cross between *C. Harrisianum superbum* and *C. Spicerianum magnificum*. Leaves distichous, broadly ligulate, rich green on the upper side, marbled with a deeper green, paler beneath, where it is also ornamented with numerous lines of reddish-brown, which proceed from the base upwards; scape erect, somewhat stout, of a purplish hue, slightly hairy, bearing a large ovate bract, and a large and gorgeous flower; the dorsal sepal is large and pure white, faintly tinged with pale green at the base, the centre being marked with a broad stripe of deep Indian-red, and the lower half beautifully blotched and shaded with deep vinous purple, leaving the large upper part of the purest white; lower sepal smaller, pale green, veined with deep green; petals prettily undulated on the upper margin, where they are also fringed with black hairs, the whole surface being of a light purplish-brown, spotted near the base with deep purple, and having a dark central band; lip large and rounded, reddish-brown with a deep yellow border, greenish-yellow beneath; staminode large, rosy-purple, with green centre. It was raised in our nurseries.—*Garden hybrid*.

FIG.—*B. S. Williams & Son's Catalogue of New Plants*, 1892, p. 8; *Orchid Album*, x. t. 453; *Journ. of Hort.*, 1892, xxiv. p. 101, f. 15.

C. PLUNERUM, *Rchb. f.*—This is supposed to be a hybrid between *C. venustum* and *C. villosum*, but the late Professor Reichenbach appears to have doubted this. He described it in the *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 40, as follows:—"Leaves shaped nearly as in *C. venustum*, light green, with few and distant darker scattered hieroglyphical signs on the upper side; peduncle reddish-brown with very short mauve hairs; bract much shorter than the stalked ovary; upper sepal nearly triangular, yet rounded on both sides, whitish with remarkably dark green nerves (seventeen); lateral sepals forming a much smaller body, white, with seven long green nerves and a few short ones;

petals broader at the point, blunt, acute, superior part with ten green conspicuous nerves, the mid-nerve nearly blackish, the anterior part of the lip mauve-brown purple; there are some black spots on the margin from the base to the centre, and similar small black spots on the basilar part of the mid-nerve; lip shaped as in *C. purpuratum*, having a well-marked horn-like apiculus on each side; the retuse anterior mouth of the shoe deep brown, superior part and anterior margin ochre-coloured, the superior part with dark spots; staminode forcipate, with an apiculus between the two great protruded shanks, ochre with some dark green nervations."—(*Garden hybrid*).

C. POLITUM, *Rehb. f.*—A very distinct and richly-coloured hybrid of the acaulescent group, raised by R. Warner, Esq., Chelmsford. The leaves are rather large, oblong acute, of a palish green, with numerous dark green chequered markings. The flowers are equal to those of a good *C. Argus*; the dorsal sepal is ovate, acute, glossy, whitish with a reddish wash, nerves green, with a central bar of deep red from the base upwards; the petals are linear-oblong, $2\frac{1}{2}$ inches long, glossy, ciliated with black hairs, wine-red, greenish towards the base, where they are marked with several Indian-purple warts; and the lip is narrowly pouch-shaped, suffused in front with purplish-red, marked with numerous green nerves, greenish on the sides, the inflexed margins ochre-coloured with brown warts. It is a very free-blooming kind, flowering in January and February.—*Garden hybrid*.

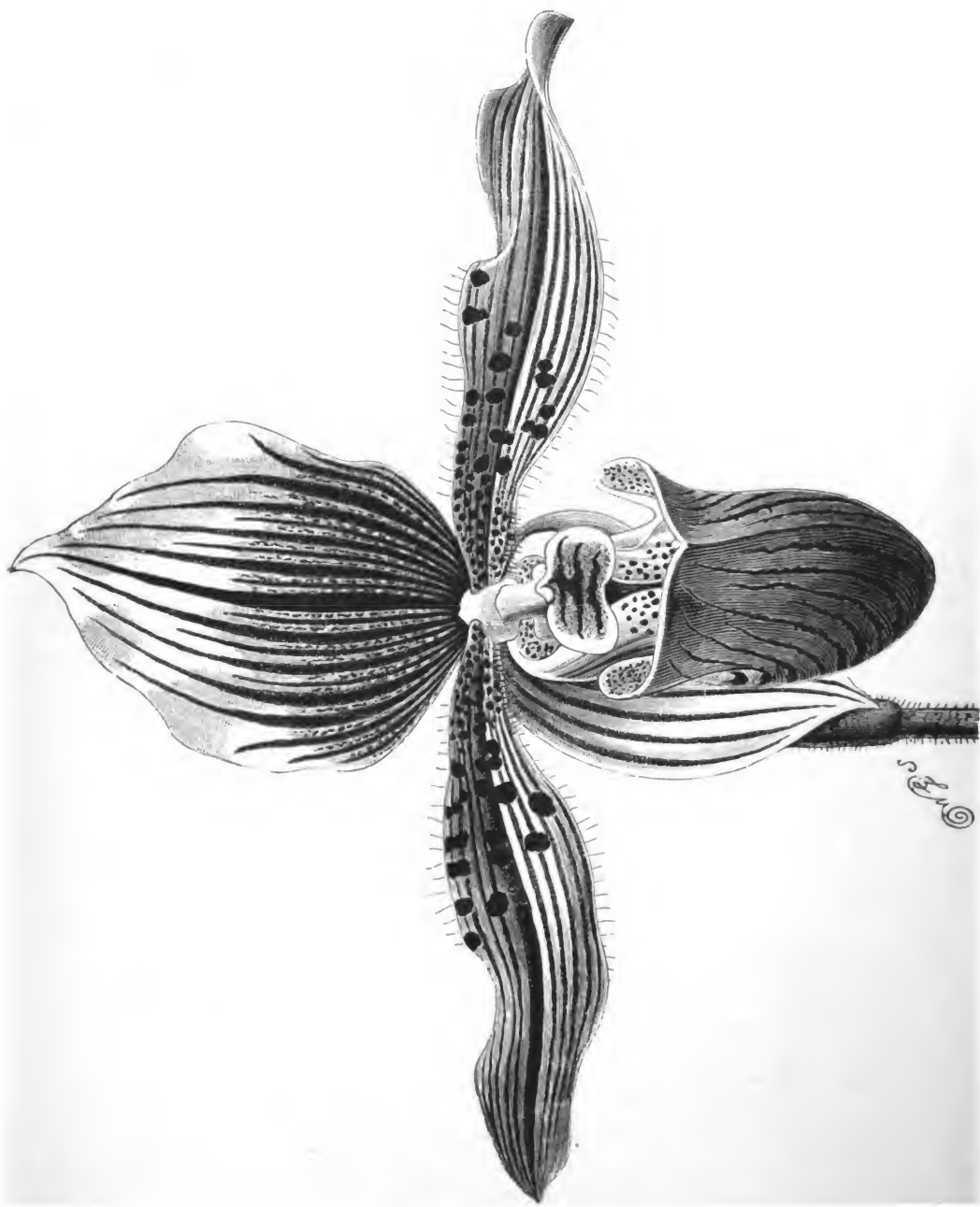
FIG.—*Orchid Album*, i. t. 36; *Gard. Chron.*, 3rd ser., 1887, i. p. 763, f. 143; *Warner's Sel. Orch. Pl.*, iii. t. 38.

C. POLLETTIANUM, *Rolfe*.—"A compound hybrid raised from *C. calophyllum* fertilised with the pollen of *C. oenanthum superbum*. The leaves are light green, with reticulated veins of a darker shade, about 5 to 8 inches long by $1\frac{1}{4}$ to $1\frac{3}{4}$ inch broad; dorsal sepal sub-orbicular, yellowish-green, broadly margined with white, veined with crimson on the sides, with brown in the middle, and with numerous chocolate blotches on the nerves of the centre and base; petals linear-oblong, light purple-brown, with darker nerves and deep purple-brown, marbled with darker spots, paler behind; staminode semi-orbicular, the apex with three broadly rounded teeth, brownish-green with a darker central boss" (R. A. Rolfe, in *Reichenbachia*).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxiii. p. 539, f. 101; *Reichenbachia*, 2nd ser., i. t. 43.

C. POLYSTIGMATICUM, *Rehb. f.*—This hybrid was raised by R. H. Measures, Esq., of Streatham, and is a cross between *C. venustum* and *C. Spicerianum*. "Upper sepal as in *C. Spicerianum*, nerves broad with ramifications of purple; lower sepal with a lightish ochre base, and with lines of brownish-purple spots; petals green at the base, with numerous small blackish spots, light reddish-brown from the middle to the apex, central vein brownish-purple; lip light brownish-purple with an ochre shade on the inferior median area" (*Reichenbach*, in *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 406).—*Garden hybrid*.

C. PORPHYREUM.—See *C. SEDENII PORPHYREUM*.



CYPRIPEDIUM POLITUM.
(From the *Androsace* (Thunberg).)

C. PORPHYROCHLAMYS, *Rchb. f.*—This lovely hybrid is the result of a cross between *C. barbatum Warnerianum* and *C. hirsutissimum*. The leaves are distichous, ancipitous at the base, oblong lanceolate, from 4 to 6 inches long, pale green, faintly tessellated with darker green; peduncle erect, one-flowered; bract boat-shaped, about equal in length to the ovary, slightly hairy; flowers large and showy; dorsal sepal roundish ovate, the central part deep rich purplish-crimson, with darker veins, margin white, with a heavy border of white on the apex, and at the base a semi-lunate patch of pale-green; inferior sepal very much smaller, greenish-white, with darker veins; petals ligulate, much deflexed, undulate at the margins, and ciliolate, yellowish-green at the base, much freckled with dark dots, the apical portion pure rich violet-purple; the pouch-like lip oblong-obtuse, brownish-purple with darker veins on the upper side, but paler beneath, passing into green; staminode purple, paler at the edges. It was raised in the nurseries of Messrs J. Veitch & Sons.—*Garden hybrid*.

FIG.—*Orchid Album*, ix. t. 426; *Orchid Review*, i. p. 105, f. 7.

C. PORPHYROSPILUM.—See *C. PYCNOPTERUM PORPHYROSPILUM*.

C. PRAESTANS, *Rchb. f.*—This species has undoubtedly an affinity to *C. glanduliferum* of Blume. "The leaves have all the strong texture and the varnish of those of *C. laevigatum* and *C. Roebelinii*; the peduncle is very strong, covered with short dark hairs; the inflorescence is five-flowered; the spathaceous bracts are nearly equal to the stalked ovary; the flowers surpass all those of the above-named species, and are nearly as large as those of *C. grande*; both sepals are nearly equal, though, curiously enough, the connate one is rather broader; the three median nerves are keeled outside; petals linear-ligulate, very much undulated at the base, as in a fine *Gloriosa*, tapering at the end, surpassing the lip by one-third; the lip has a very long channelled stalk, and has the uncommonly elegant shape of that of *C. Stonei* itself; the staminode is like that of *C. Roebelinii*, exceedingly gibbous at the base, abruptly acuminate at the top, villous on the sides" (Reichenbach, in *Gardeners' Chronicle*, N.S., 1886, xvi. p. 776).—*New Guinea*.

FIG.—*Lindenia*, iii. t. 102; *Journ. of Hort.*, 1887, xv. p. 179, f. 24; *Gard. Chron.*, 3rd ser., 1887, ii. p. 813, f. 155.

C. PRAESTANS KIMBALLIANUM, *Linden et Rodigas*.—This variety is named after W. S. Kimball, Esq., of Rochester, N. Y., a munificent patron of Horticulture, and who has the finest collection of *Cypripediums* in the United States. It is said to be much superior to the type, and the lip similar in colour and form to *C. Stonei*, whereas in *C. praestans* the lip is yellow; the petals are broader and better coloured than in *C. praestans*, and the dorsal sepal is more distinctly marked.

FIG.—*Lindenia*, vi. t. 249.

C. PRYORIANUM, *Hort. Sander*.—The result of a cross between *C. Lathamianum* and *C. Harrisianum*, obtained and exhibited by Messrs. F. Sander & Co. It produces fine massive flowers; the upper sepal is almost black at the base, passing into crimson and margined with white; petals broad, greenish-yellow tinted with red; lip greenish-yellow shaded with purple. This plant was exhibited before The Royal Horticultural Society in the autumn of 1893.—*Garden hybrid*.

— **C. PURPURATUM**, *Lindley*.—A pretty stemless species, with beautifully tessellated oblong acute foliage, and producing its flowers during the winter months. The flowers are large, very much in the way of those of *C. barbatum*, but differ in the broad oval-oblong acute, ciliated, not verrucose petals, which are brownish-purple streaked with deeper lines and closely dotted at the base with dark purple; the dorsal sepal, which has more pure white at the end, is acuminate, with revolute edges, and is boldly striped with purple on a white ground. Sir W. J. Hooker thinks Dr. Wight's figure quoted below rather belongs to *C. barbatum*.—*Malay Archipelago*.

FIG.—*Bot. Reg.*, t. 1991; *Bot. Mag.*, t. 4901; *Flora des Serres*, t. 1158; *Wight, Icon. Pl. Ind.*, v. t. 1760 (?); *Hart. Parad.*, i. t. 1; *Revue Hort. Belge*, 1886, p. 193.

C. PYCNOPTERUM, *Rehb. f.*—A hybrid the origin of which is not known. "This is a very interesting plant, of surprising colour; it has the leaf of *C. hirsutissimum*, and a two-flowered peduncle, much in the way of that of *C. Lowii*, but smaller and apparently very much shorter, brownish, densely covered with short hairs; the triangular ancipitous bracts are green, with a few dark longitudinal stripes; both sepals are of a light striking parrot-green, the upper one is broader, the inferior one narrower and cucullate; the ligulate petals are broader towards their acute apex, a good deal longer than the sepals, and ciliate; at the base they are green, with dark warty blotches, and excepting this they are of a violet colour, turning into what we call, since Dr. Lindley in *Orchidology*, port-wine colour; the lip has that peculiar hue between olive-green and brown" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1876, v. p. 622).—*Garden hybrid*.

C. PYCNOPTERUM PORPHYROSPILUM, *Veitch*.—We are not acquainted with this hybrid, but Messrs. J. Veitch & Sons, in whose nurseries this hybrid was raised, give the following description in their *Manual of Orchidaceous Plants*:—"Flowers larger; sepals whitish, with green veins; petals more brightly coloured; infolded lobes of lip yellowish, with a few brownish warts."—*Garden hybrid*.

SYN.—*C. porphyrospilum*.

C. RADIOSUM, *Rehb. f.*—A cross between *C. Lawrenceanum* and *C. Spicerianum*, which is described by the late Professor Reichenbach as follows:—"The dorsal sepal is remarkable—*la pièce de résistance* of the whole, though neither so striking as in *C. Spicerianum*, nor as in *C. Lawrenceanum*. It is rather broad and acuminate, white, with mauve-purple lines over the chief nerves (a dozen), it has a dark purple, almost concealed mid-rib; all these nerves are green at the base, and have a green tint between them; dorsal sepal nearly as long as the lip, with light brown lines; petals nearly divaricate, though descending a little, a little undulate at the margin, and provided there with some ciliae, green with sepia-brown mid-line, a wash of sepia-brown around the anterior borders, and numerous sepia-brown spots on the upper margin; the form of the lip is that of *C. Lawrenceanum*, green on the back, brown with green border in front; staminode nearly as in *C. Lawrenceanum*, though only with three teeth in front, but with a light mauve disk and a white border. The orange eye of *C. Spicerianum* has vanished" (*Gardeners' Chronicle*, n.s., 1885 xxiv. p. 424).—*Garden hybrid*.

C. REICHENBACHIANUM.—See *C. LONGIFOLIUM*.

— **C. RETICULATUM**, *Rchb. f.*—This species was discovered by Gustav Wallis on the borders of the river Zamora, in Ecuador. According to the late Professor Reichenbach, it has affinity with *C. Boissierianum*. It should prove of great use to the hybridists.—*Ecuador*.

FIG.—*Lindenia*, i. t. 10.

SYN.—*Selenipedium reticulatum*.

C. RICHARDSONI, *Hort.*—A beautiful novelty exhibited at the Drill Hall on October 10th, 1893, by A. J. Hollington, Esq., Forty Hill, Enfield. It is a cross between *C. Lawrenceanum* and *C. Hookerac*. The dorsal sepal is broad and flat, green at the base, and rich rosy-purple at the edges and tip, covered with many deep purple lines; petals rosy-purple at the extremities, greenish at the base, covered with a few wart-like shining spots near the upper and lower edge; a purple median line runs half the length of the petals; pouch light brown, greenish at base.—*Garden hybrid*.

C. ROBUSTIUS, *Rchb. f.*—This is a hybrid raised by Mr. Horn, Baron Nathaniel de Rothschild's Orchid grower, and is the result of a cross between *C. Sedeni* and *C. longifolium*. It was also raised by us independently. Being the reversed cross from *C. calurum* it has consequently great affinity with that hybrid. "The green leaf is 2 inches broad by 1½ foot in length; peduncles very strong, branched, dark brown, hairy; bracts nearly or quite equal to the dark purple downy ovaries; upper sepal triangular, purple outside, whitish, bordered and striped with purple inside; side sepals navicular, inflated, oblong-acute, outside purple with a white part, white with purple margin on the inside; petals purple, with a white central space on the inside, longer than the upper sepal, much narrower, and undulate towards the apex, bent downwards; lip with two broad involved basilar lobes, with one argute blunt-compressed lobe on each side over the mouth, with a broad, nearly retuse sac, whose border is toothed (!), purple, involved part white, with numerous purple spots; staminode transverso-pandurate, white, with purple freckles, bearded on the outer border" (Reichenbach, in *Gardener's Chronicle*, 3rd ser., 1889, v. p. 394).—*Garden hybrid*.

C. ROEBELINII, *Rchb. f.*—This fine plant is a near neighbour of *C. philippinense*, according to Professor Reichenbach, but the leaves are narrower, and the scape more hairy; the dorsal sepal is narrow, whitish, with five long and three very short dark purple lines; the lip is light yellow, the staminode light ochre. This plant appears to have been first bloomed in this country by Mr. Cypher, of Cheltenham, by whom it was exhibited at the Regent's Park Exhibition in May, 1884; it was introduced by Mr. Sander through his collector, M. Roebelin, who states that the plant is found near the sea, growing on stones without any shade, the strongest and most compact plants being those which are entirely exposed to the full sun.—*Philippine Islands*.

C. ROEBELINII CANNARTIANUM, *Hort.*—A fine variety with large flowers, having the inferior sepals divided, instead of united as in the type; it is named after the late M. F. de Cannart d'Hamale, of Malines, Belgium, who possessed one of the finest collections of East Indian Orchids in Belgium.

FIG.—*Lindenia*, iii. t. 141.

SYN.—*C. cannartianum*.

✓ **C. ROEZLII**, *Rehb. f.*—This species resembles *C. longifolium* in habit. The scape or flower-stem grows 3 feet high, and bears many flowers; the leaves are 2 feet long, 2 inches broad, ligulate keeled, and of a bright green; the flowers are very large, the dorsal sepal yellowish-green, with a suffused rosy-purple border, the lateral sepals flesh-coloured, the linear lanceolate petals spreading, green, with a bright red-purple border and tip, and the lip 3 inches long, with the saccate portion greenish-yellow. It blooms during March, April, and May; indeed it may be called a perpetual bloomer.—*New Grenada*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 138; *Floral Mag.*, 2nd ser., t. 119; *Bot. Mag.*, t. 6217; *Gartenflora*, t. 754.

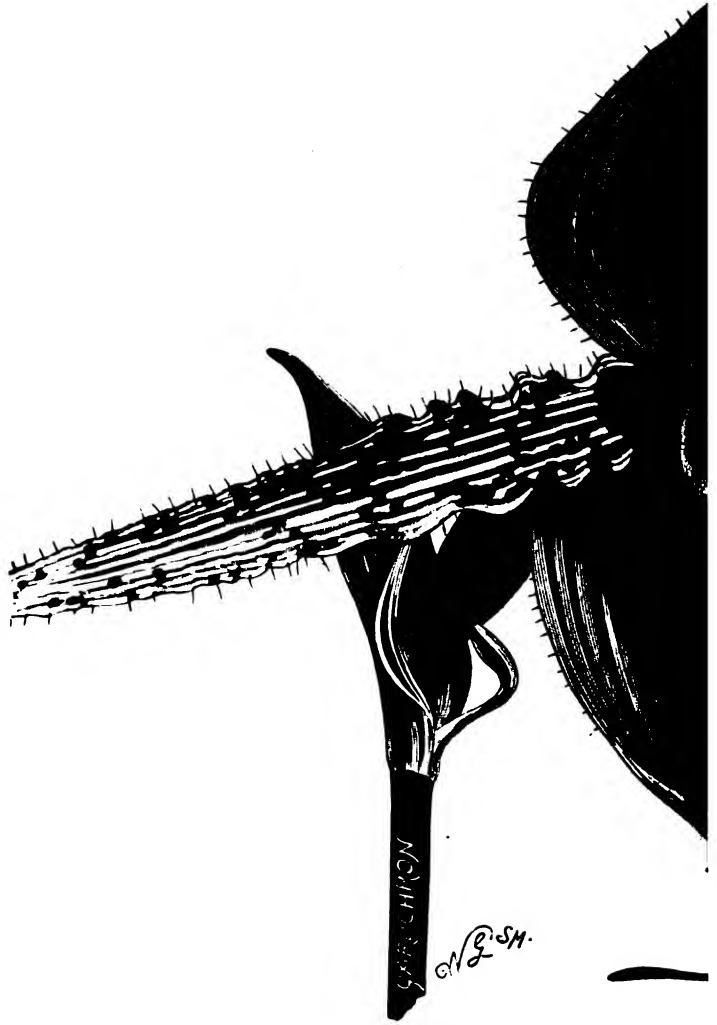
SYN.—*Selenipedium Roezlii*.

C. ROTHSCHILDIANUM, *Rehb. f.*—This is a most handsome and distinct *Cypripedium*, and appears to be another one of the forms of the *C. praestans* section, which was introduced by Messrs. F. Sander & Co. The late Prof. Reichenbach described it in the *Gardeners' Chronicle* as follows:—"Its leaves are unusually long, more than 2 feet in length, $2\frac{1}{2}$ to 3 inches in width, green, glossy, very strong; the peduncle is said to be three-flowered, but may become more florid later; it is reddish with few very short hairs; the green bract is spathaceous, not equal to half the stalked glabrous ovary, and has a few dark longitudinal stripes at the base; the fresh flower at hand is much smaller than my wild ones, which are quite equal to those of the best of its Papuan consort, *C. praestans*; odd sepal cuneate oblong acute, yellowish with numerous longitudinal dark, almost blackish, stripes, also white at the borders; lateral sepals united into one nearly equal smaller shorter body; petals undulate at the base, linear, narrow at the top, yellowish green with dark longitudinal lines, and dark blotches at the base; lip like that of *C. Stonei* and *C. praestans*, very strong, almost leathery, cinnamon-coloured, with ochre border to the mouth, and with an ochre-coloured mid-line underneath. The most peculiar point is the staminode; it is quite novel; it has a stout base, and rises erect, bending down into a beak-like, narrow process, covered partly with hairs, the hairs consist of rows of cells, and the cells have several girdles of numerous tubercles in their circumference; the numerous hairs are thicker, and white at the top; this staminode looks much like the throat and head of some bird, such as a crane."—*New Guinea*.

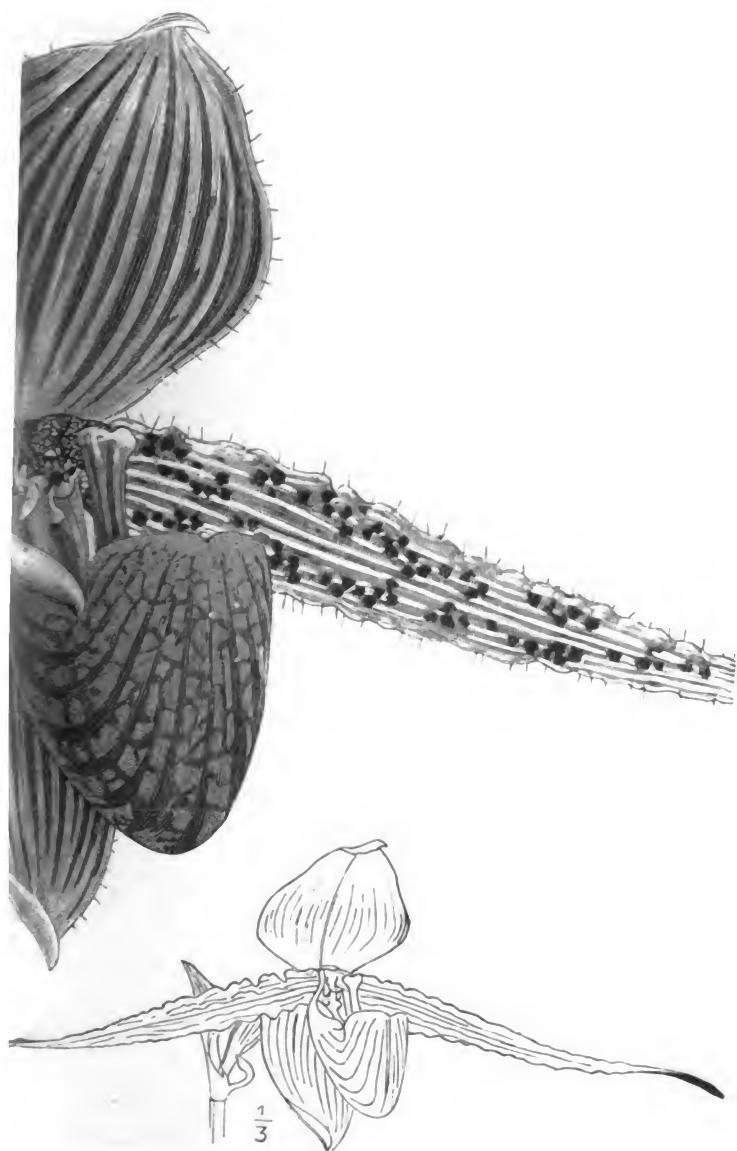
FIG.—*Reichenbachia*, ii. t. 61; *Journ. of Hort.*, 1889, xviii. p. 239, f. 36; *Bot. Mag.*, t. 7102; *Gard. Chron.*, 3rd ser., 1891, x. p. 15, f. 3.

SYN.—*C. neo-guineense*.

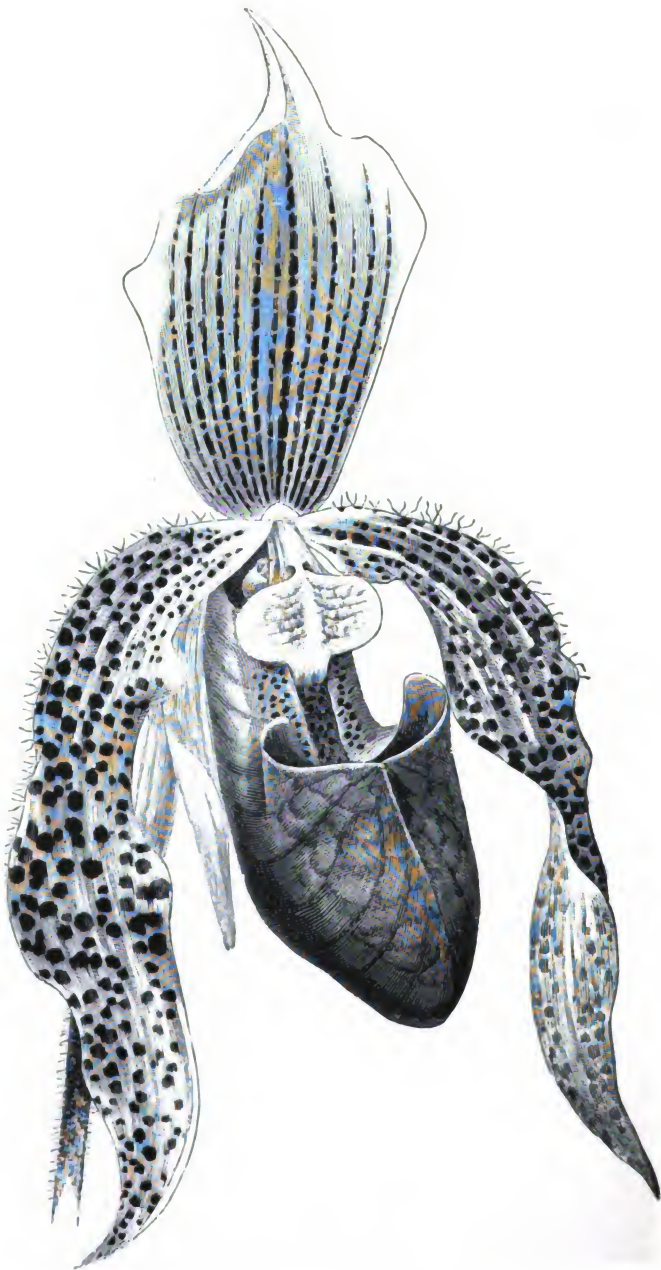
C. RUBRUM.—A pretty hybrid between *C. venustum* and *C. Hookerae*, raised by F. M. Burton, Esq., Gainsborough. Dorsal sepal ovate, acuminate, pale green at the base, passing into white, with numerous narrow green veins; petals deflexed, green at the base, passing into pale purplish-brown about the middle, the upper half covered with many dark purplish-brown spots and dots, the lower half having only a few similar spots about the middle; the extremities of a uniform rich rosy-purple; the edges ciliate. Lip purplish-bronze, passing into greenish-bronze at the base; staminode large, lunate, purplish-bronze.—*Garden hybrid*.



CYPRIPEDIUM RC
(From the *Gard.*)



THSCHILDIANUM.
(from Chronicle.)



CYPRIPEDIUM SANDERO-SUPERBIENS.

(From the *Journal of Horticulture*.)

C. SALLIERII, *Godefroy*.—This is said to be a cross between *C. villosum* and *C. insigne*, but we have seen a plant which flowered in Mr. Shuttleworth's nursery which had been imported from Burmah, and which proved to be exactly like this plant, moreover we learn that Mr. Sallier disclaims any knowledge of this being a hybrid. It is a bold growing plant somewhat between *C. insigne* and *C. villosum*, and it produces a large and showy flower. Dorsal sepal pale green, the upper portion white, this is continued in a broad border almost to the base, similar to *C. insigne*, it is in addition striped with dark green and dotted with dark brown; inferior sepal small, pale green; petals brownish in the upper half, and greenish-yellow in the lower portion, with a dark brownish-purple streak in the centre, having the varnished appearance peculiar to *C. villosum*; pouch large, brown, suffused with yellow; the foliage reminds one also of that species. Blooms during winter and spring months.—*Burmah*.

FIG.—*Godefroy's Les Cypripédiées*, part i.

C. SALLIERII AUREUM, *Hort*.—This variety is much superior to the type. The dorsal sepal is yellow at the base, margined with white, and spotted at the lower part; petals and lip being almost pure yellow. Flowers in autumn.

FIG.—*Lindenia*, li. t. 84. (*C. Sallierii*.)

SYN.—*C. Sallierii Hyacanth*.

C. SANDERIANUM, *Rehb. f.*—This is a handsome and remarkable species, and was discovered by Fürsterman when collecting for Messrs. Sander & Co. The late Professor Reichenbach regarded it as a near ally of *C. philippinense* and the recently introduced *C. Roebelinii*, but having more affinity with the latter on account of the narrower sepals, which in *C. philippinense* are broadly deltoid. "The leaves are long, broad, and of a bright green colour, and shine as if varnished; the flower stems have a deep reddish-purple velvety covering, and bear from three to five flowers; the green bracts have a purple hue outside, are ciliate at the edges, and striped with darker purple; the sepals are very concave, triangular lanceolate, with dark purple veins, and beset with stiff hairs; the petals are linear and tail-like, and grow 18 inches in length; they are broader at the base, where they are of a rich reddish-purple mottled with a light hue; the tail-like portions of the petals are blackish-purple, and their tips are quite blunt; the pouch is similar in shape to that of *C. Stonei* and is of a dark brownish-red hue; as to the staminode it is distinct from that of any of the other species."—*Malay Archipelago*.

FIG.—*Reichenbachia*, i. t. 3; *Veitch's Man. Orch. Pl.*, iv. p. 46.

C. SANDERO-SUPERBIENS, *Hort*.—This splendid hybrid was exhibited by N. C. Cookson, Esq., before the Royal Horticultural Society, on Aug. 29th, 1893. It is the result of a cross between *C. Sanderianum* and the beautiful *C. superbiens*, Captain Vipan having fertilised the flowers and ripened the seed, some of which was handed to Mr. Cookson, who has succeeded in raising the first flowering plant. In growth it resembles *C. Curtisii*, but the flowers have the general aspect of *C. Morganiae*. The dorsal sepal, which is acutely pointed,

is greenish-white, distinctly lined with chocolate-brown; the petals, which are drooping, are of a pale yellow colour, heavily blotched with chocolate; the lip is reddish-brown.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvii. p. 215, f. 31.

C. SAUNDERSIANUM, *Rchb. f.*—A cross between *C. caudatum Warscewiczii* and *C. Schlimii*, raised by Mr. Marshall, of Enfield, and named in honour of the late W. Wilson Saunders, Esq. It is described by Reichenbach as follows:—"Upper sepal whitish with green and purple veins; petals ligulate, acuminate, undulate, pale purple; lip spotted with purple on a white ground" (*Gardeners' Chronicle*, n.s. 1886, xxvi. p. 654).—*Garden hybrid*.

C. SAVAGEANUM, *O'Brien*.—This hybrid was raised by crossing *C. Harrisianum* with *C. Spicerianum*. "The foliage is veined, as in *C. Harrisianum*, but the leaves are much shorter, and the veining closer. The dorsal sepal of the flower is in form much as in *C. Harrisianum*, one-third of the outer surface being snow-white, within which is a rose-coloured area, the base being emerald-green, the dark line running up the centre is as in *C. Spicerianum*; the petals and pouch are in form near to those organs in *C. Spicerianum*, the petals tinged with rose and having a dark and well-defined line up the middle of each. It is a charming flower, and is named in honour of the grower of Mr. Kimball's noted collection at Rochester, New York. The opposite cross resulted in *C. Seegerianum*, in which, in the resemblance to the parents, the features are the opposite to *C. Savageanum*" (J. O'Brien, in *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 407).

C. SCHLIMII, *Linden*.—A very beautiful species, quite distinct from most others in its style of growth, as well as in its flowers. The leaves are ligulate, acute, 8 inches long, light green; the flower stem is hairy, longer than the leaves, branching, bearing as many as eight flowers, which are 2 inches across; the sepals and petals white, beautifully mottled and striped with dark rose, and the lip white with a large blotch of deep rose on the front of the pouch. This is a difficult plant to cultivate. The imported plants appear as if they had been growing beside streams of water which are subjected to being flooded, for the leaves are frequently coated to a great extent with deposited mud; and it would, therefore, appear that our difficulties with this plant have arisen chiefly from an insufficient supply of water. We pot in peat, adding a little turfy loam and sand, with good drainage, and take care that water does not lodge in the heart of the plant. It is best grown at the cool end of the *Cattleya* house.—*Colombia; New Grenada: Orana*.

FIG.—*Bot. Mag.*, t. 5614; *Batem. Second Cent. Orch. Pl.*, t. 200; *L'Il. Hort.*, 3rd ser., t. 183; *Pescatorea*, t. 34; *Flore des Serres*, t. 1917; *Xenia Orch.*, i. t. 44.

SYN.—*Selenipedium Schlimii*.

C. SCHLIMII ALBIFLORUM, *Lemaire*.—A very pretty variety, differing from the type in being more robust and free-growing in habit, with shorter leaves. The flowers have the sepals and petals white dashed with delicate pink at the base, and the lip is white suffused with rose, more deeply coloured opposite the column, which is bright yellow. It flowers during the winter months.—*Colombia*.

FIG.—*L'Il. Hort.*, t. 183; *Veitch's Man. Orch. Pl.*, iv. p. 67.

SYN.—*Selenipedium Schlimii albiflorum*.



CYPRIPEDIUM SEDENI.

(From Messrs. J. Veitch & Sons' Catalogue.)

C. SCHOMBURGKIANUM.—See *C. KLOTZSCHIANUM*.

C. SCHRÖDERAE, *Rchb. f.*—A very distinct and beautiful hybrid between *C. caudatum* and *C. Sedeni*, raised by Mr. Seden, and named by Messrs. Veitch in compliment to the Baroness Schröder. A fine specimen of it was exhibited by Mr. Ballantine, gardener to Baron Schröder, The Dell, Staines, in December, 1883. It is a really grand plant, with leaves as in *C. Sedeni*, and a branching stem with several large and high-coloured flowers. The dorsal sepal is pale reddish-green lined with greenish-purple; the petals, which are 4 inches long, very broad, and turned downwards, are whitish-green in the centre, and stained with purple-crimson; and the lip is large, similar in shape to that of *C. caudatum*, of a dull crimson. The plant blooms in December.—*Garden hybrid*.

FIG.—*Orchid Album*, v. t. 196; *Journ. of Hort.*, 1890, xx. p. 405, f. 60; *Veitch's Man. Orch. Pl.*, iv. p. 105.

SYN.—*Selenipedium Schröderae*.

C. SCHRÖDERAE SPLENDENS, *Linden.*—This variety differs from the type in having more twisted petals and brighter coloured flowers.—*Garden hybrid*.

FIG.—*Lindenia*, ii. t. 69.

C. SEDENI, *Rchb. f.*—A very handsome hybrid raised between *C. Schlimii* and *C. longifolium*. The leaves are strap-shaped, tapering to a point, deep green, and about a foot in length; the flower stem, which is taller than the leaves, bears several blossoms, which are large and showy, the sepals being ovate, greenish-white, the petals longer, twisted, white edged with crimson-purple, and the lip rich crimson, spotted inside with crimson on a white ground. This Lady's Slipper may be said to be a continuous bloomer, as it throws up a succession of flowers from the same spike. We have found it do best in the *Cattleya* house. It belongs to the *Selenipedium* group.

FIG.—*Jennings, Orch.*, t. 4; *Floral Mag.*, 2nd ser., tt. 206, 302; *Veitch, Cat.*, 1874, p. 7, with fig.; *L'Orchidophile*, 1882, p. 178; *Veitch's Man. Orch. Pl.*, iv. p. 106.

SYN.—*Selenipedium Sedeni*.

C. SEDENI ALBANENSE, *Veitch.*—A cross between *C. Schlimii* and *C. Sedeni*. This is similar to *C. Sedeni*, but its flowers are paler, and the mouth of the pouch is more contracted.—*Garden hybrid*.

SYN.—*C. albanense*.

C. SEDENI CANDIDULUM, *Rchb. f.*—A distinct and desirable hybrid between *C. longifolium* and *C. Schlimii albiflorum*, raised by Mr. Seden. The sepals and petals are white, with a faint rosy hue on the edges, and the lip is of a pale dull rose colour, it flowers nearly all the year round if the old spikes are left on the plant. The petals are narrower than is generally the case in *C. Schlimii*.—*Garden hybrid*.

FIG.—*Lindenia*, vi. t. 245; *Orchid Album*, xi. t. 431.

SYN.—*Selenipedium Sedeni candidulum*.

C. SEDENI PORPHYREUM, *Veitch.*—A cross between *C. Roezlii* and *C. Schlimii*. This is a strong growing plant, and flowers all the year round; in the Wood-

lands collection at Streatham, we have seen a plant with many spikes which bloomed continually for a year and seven months, and then they were cut off the plant in order to allow it some rest. The flowers are larger and more brilliantly coloured than the type.—*Garden hybrid*.

SYN.—*C. porphyreum*.

C. SEEGERIANUM, *Hort.*—A cross between *C. Spicerianum* and *C. Harrisianum*. This is a distinct form, with long plain green strap-shaped leaves, flowers large and showy, dorsal sepal less recurved than in *C. Spicerianum*, white suffused with bright rose.—*Garden hybrid*.

C. SELLIGERUM, *Veitch*.—A very desirable and distinct hybrid between *C. philippinense* (*laevigatum*) and *C. barbatum*. The plant is of bold massive and very free flowering habit, with broad thick shining faintly tessellated leaves, as in *C. philippinense*. The flower scape is erect, blackish-crimson, pubescent, and bears from two to three large flowers; the dorsal sepal is white with broad blackish-crimson veins; the strongly ciliated petals are about 3 inches long, deflexed, with a partial twist, vinous-red veined with crimson-purple, and having several blackish marginal warts, especially on the upper side; and the lip or pouch is similar in shape to that of *C. barbatum*, but of a lighter red colour; flowers in summer and autumn.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1878, p. 13, with fig.; *Gard. Chron.*, N.S., xix. p. 776, f. 133; *Florist and Pom.*, 1878, p. 85, with fig.; *Veitch's Man. Orch. Pl.*, iv. p. 97.

C. SELLIGERUM MAJUS, *Veitch*.—This noble hybrid is in every respect superior to *C. selligerum*. The leaves are much longer, broader, and stouter; the dorsal sepal 2 inches long and $2\frac{1}{4}$ inches broad, bluish-white, distinctly veined with rosy-purple, greenish at the base; the petals are 3 to $3\frac{1}{2}$ inches long, pale rosy-purple, distinctly veined with deep vinous-purple, the edges are also ciliated, and there are a few blackish warts on the upper margins; lip large and bold, greenish-purple, suffused with brown; staminode bright green. It flowers in May and June, and lasts a long time in perfection. It is a grand variety for exhibition purposes.—*Garden hybrid*.

FIG.—*Lindenia*, i. t. 22; *Reichenbachia*, ii. t. 54; *L'Orchidophile*, 1890, p. 272; *Orchid Album*, xi. t. 483

C. SELLIGERUM PEETERSIANUM, *H. Williams*.—This hybrid is so closely allied to *C. selligerum* that we can only consider it a variety. It was raised from *C. barbatum Warnerii* and *C. philippinense*.—*Garden hybrid*.

SYN.—*C. Peetersianum*

C. SELLIGERUM RUBRUM, *Hort.*—This variety is of free bold habit. Leaves distichous, ligulate oblong, bluntish, thick, shining, keeled beneath, spreading, greyish-green, faintly tessellated; scape erect, branched, pubescent, of a purplish-crimson, bearing about three blossoms, each having at the base a concave ovate bract; flowers large, high coloured, and showy; dorsal sepal roundish ovate, white, flushed with dull red, and marked with numerous longitudinal deep crimson-red bands or stripes, the apex incurved, the connate sepal smaller and paler in colour; petals linear ligulate, attenuated at the apex, distinctly ciliated, about 3 inches long, spreading, deflexed with a partial twist,

vinous-crimson, veined with crimson-purple, and having several blackish hairy warts, especially on the upper edge; lip oblong, bluntly pouch-shaped, spreading at the upper edge, which is rounded behind, greenish and slightly veiny, the anterior portion of a deep crimson or vinous-red; staminode obcordate with an apiculus, pale reddish green, deflexed.—*Garden hybrid*.

FIG.—*Orchid Album*, vi. t. 255 (*C. selligerum*).

C. SIAMENSE, Rolfe.—“The leaf is linear-oblong, 6 inches long, $1\frac{1}{2}$ inch broad, grey-green, somewhat glaucous above, and tessellated with dark green nerves, very glaucous below; scape $1\frac{1}{4}$ inches high, dark purple-brown, pubescent; bract acute, 1 inch long; ovary $2\frac{3}{4}$ inches, purple-brown; dorsal sepal broadly ovate, acute, $1\frac{1}{2}$ inch long; light green in the centre and base, passing into light purple, and thence into a broad white margin; the nerves dark green, seventeen in number, and the margin reflexed; lower sepal smaller, narrower, pale green, with six darker nerves; petals ligulate, slightly deflexed, $2\frac{1}{4}$ inches long, 8 lines broad, ciliate, light green, with twelve darker nerves, with about six blackish warts on upper margin, the distal third passing into pale purple; the lip 2 inches long; the pouch ellipsoidal, sub-compressed, pallid behind and at apex, with small dusky spots, purple-brown in front, the infolded basal lobes meeting at their edge, pale whitish-green, with numerous small, and a few larger purple-brown spots and warts” (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, vii. p. 161).—*Siam*.

C. SMITHII, Hort.—This handsome hybrid was obtained by crossing *C. Lawrenceanum* with *C. ciliolare*. It was exhibited at the Drill Hall, on October 10th, 1893, by A. J. Hollington, Esq., Forty Hill, Enfield. The dorsal sepal is broad, of a rich rosy-purple, passing into white near the tip, and covered with rich deep purple longitudinal veins; petals purplish-brown at the extremities, greenish towards the base, covered with wart-like spots, and hairy at the edges; pouch brown with a purplish tinge.—*Garden hybrid*.

C. SOUTHGATENSE, Hort.—This splendid hybrid is the result of a cross between *C. bellatulum* and *C. Harrisianum*, and resembles most the first-named parent, but is a great improvement on that plant, the flowers being larger and bolder in all their parts, yellowish-white in colour, and densely blotched with darkest purple.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1892, xxv. p. 39, f. 6.

C. SOUTHGATENSE SUPERBUM, Hort.—A superior variety was exhibited by Thos. Statter, Esq., Stand Hall, Manchester, on November 14th, 1893, before the Royal Horticultural Society, when it obtained a first-class certificate.

C. SPICERIANUM, *Rchb. f.*—One of the most distinct and beautiful species of the stemless group of this large and rapidly increasing genus, and one so highly appreciated by Orchid-lovers, that at an auction sale which took place a few years ago a plant realised 100 guineas. It has been named in honour of H. Spicer, Esq., Woodlands, Godalming, who first introduced it to England. In growth it somewhat resembles *C. insigne*; the leaves are few, distichous, linear-oblong, acute, keeled, dark lurid green, the sheathing base slightly spotted with

purple; the scape is pubescent, purple, the flowers solitary, from 2 to 3 inches in diameter, the dorsal sepal very large, about 2 inches across, green at the base, otherwise pure white, with a broad purple stripe extending from the base to the apex; the petals are pale green with beautifully undulated margins, striped and spotted with purple; and the lip is a deep brownish-purple. The staminode



CYPRIPEDIUM SPICERIANUM.

(From the *Gardeners' Chronicle*.)

is very conspicuous, being of a bright magenta-purple margined with white. It flowers in October, November, and December. Some of the varieties are tinged with rose on the dorsal sepal.—*India: Assam*.

FIG.—*Bot. Mag.*, t. 6490; *Orchid Album*, iii. t. 119; *Gard. Chron.*, N.S., xiii. p. 41. fig. 7; *L'Ill. Hort.*, 3rd ser., 1883, xxx. t. 473; *Xenia Orch.*, iii. t. 231; *Florist and Pom.*, 1882, p. 179, with fig.; *The Garden*, xvii. p. 169, with fig.; *Id.*, xxiii. t. 378 (blush var.); *Revue Hort. Belge*, 1885, p. 12; *Veitch's Man. Orch. Pl.*, iv. p. 47; *L'Orchidophile*, 1890, p. 145.

C. SPICERIANUM MAGNIFICUM, *Hort.*.—A very superior form, the dorsal sepal being pure white, and the flower much larger, the peduncle is sometimes two-flowered; the colour of the petals and lip is much brighter than in the type.

C. SPICERIANUM NIGRESCENS, *Hort.*.—This differs from the normal form in having smaller flowers and a dark brownish-black coloured lip.

C. STATTERIANUM.—This is a cross between *C. Spicerianum magnificum* and *C. rexillarium superbum*, and was exhibited before the Royal Horticultural Society on Oct. 24th, 1893, by Thomas Statter, Esq., of Stand Hall, Manchester, when it was awarded a first-class certificate. The dorsal sepal is very broad, of a deep rosy-purple veined with deep purple, with a narrow white border and a deep purple median band; petals green at the base, the remainder purplish-brown, a dark brown median line running from base to apex and several brown veins in the lower two-thirds; the base covered with numerous minute purple-brown spots; lip short and stout, purplish-brown; staminode deep purple-rose.

FIG.—*Journ. of Hort.*, 1893, xxvii. p. 417, f. 61.

C. STENOPHYLLUM, *Rchb. f.*.—A cross between *C. Schlimii* and *C. caricinum*, with narrow plain green leaves, and an erect many-flowered scape; the flowers are somewhat small, but charming; dorsal sepal white, veined with green; inferior sepal smaller, and similar in colour; petals white at the base passing into pale rose, and tipped with dark rose; pouch rose colour; the inflexed lobes white, dotted with rose.—*Garden hybrid.*

C. STONEI, *Low.*.—This superb species first flowered some years ago in the fine collection of the late J. Day, Esq., of Tottenham, after whose Orchid-grower it was named. It has thick fleshy roots, and produces few dark green leathery oblong mucronate leaves, 10 or 12 inches long, from the midst of which the dark purple scape ascends to the height of 2 feet, bearing three or four flowers; the sepals are large, white within, streaked with deep purple-brown, and stained with dark purple on the outer side; the petals are 5 inches long, curved downwards, yellow for two-thirds of their length, streaked and blotched with brown-purple, the tip wholly brown-purple; and the lip is large, peculiarly slipper-like in form, purplish-red with darker purple veins. It produces its blossoms during autumn. There are several varieties, but all are worth growing.—*Borneo.*

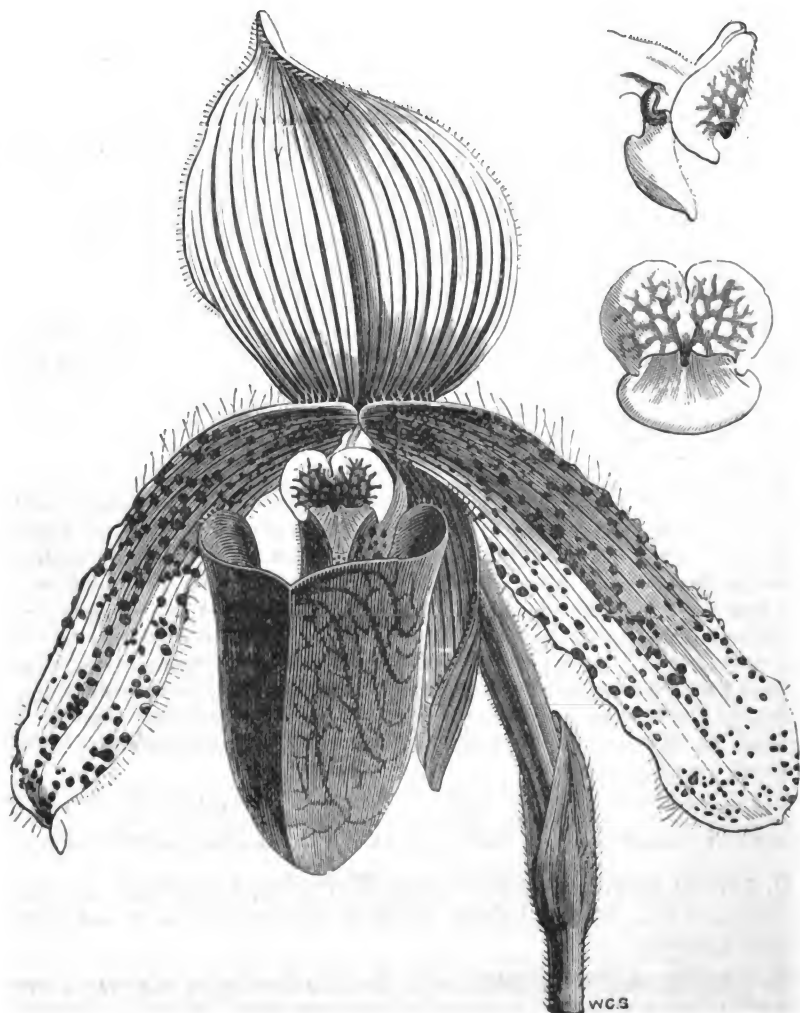
FIG.—*Bot. Mag.*, t. 5349; *Batem. Second Cent. Orch. Pl.*, t. 141; *L'Ill. Hort.*, t. 355; *Jennings, Orch.*, t. 12; *Flore des Serres*, t. 1792; *Orchid Album*, i. t. 8; *Lindenia*, vi. t. 281; *Veitch's Man. Orch. Pl.*, iv. p. 49; *Gard. Mag.*, 1893, p. 579 (woodcut) (var. *Cannartae*).

C. STONEI ACROSEPALUM, *Rchb. f.*.—This variety is similarly coloured to the typical plant, but its inferior sepal is not connate, as in the type.—*Sarawak; Borneo.*

C. STONEI PLATYTAENIUM, *Rchb. f.*.—This handsome variety is much superior to the type and a grand addition to its class. It was imported by Messrs. Low & Co., of Clapton, many years ago, and first flowered by the late John Day, Esq., of Tottenham. The flowers are conspicuous for the breadth of their petals; the dorsal sepal is white with purple stripes; the broadly ligulate petals are 4 to 5 inches in length and $\frac{3}{4}$ inch in breadth, curved down-

wards, whitish on the other surface, spotted and tinted with yellow, deep crimson-purple at the tips, the inner surface white blotched with reddish purple; the lip is similar to that of *C. Stonei*, rosy-purplish veined with darker purple.—*Borneo*.

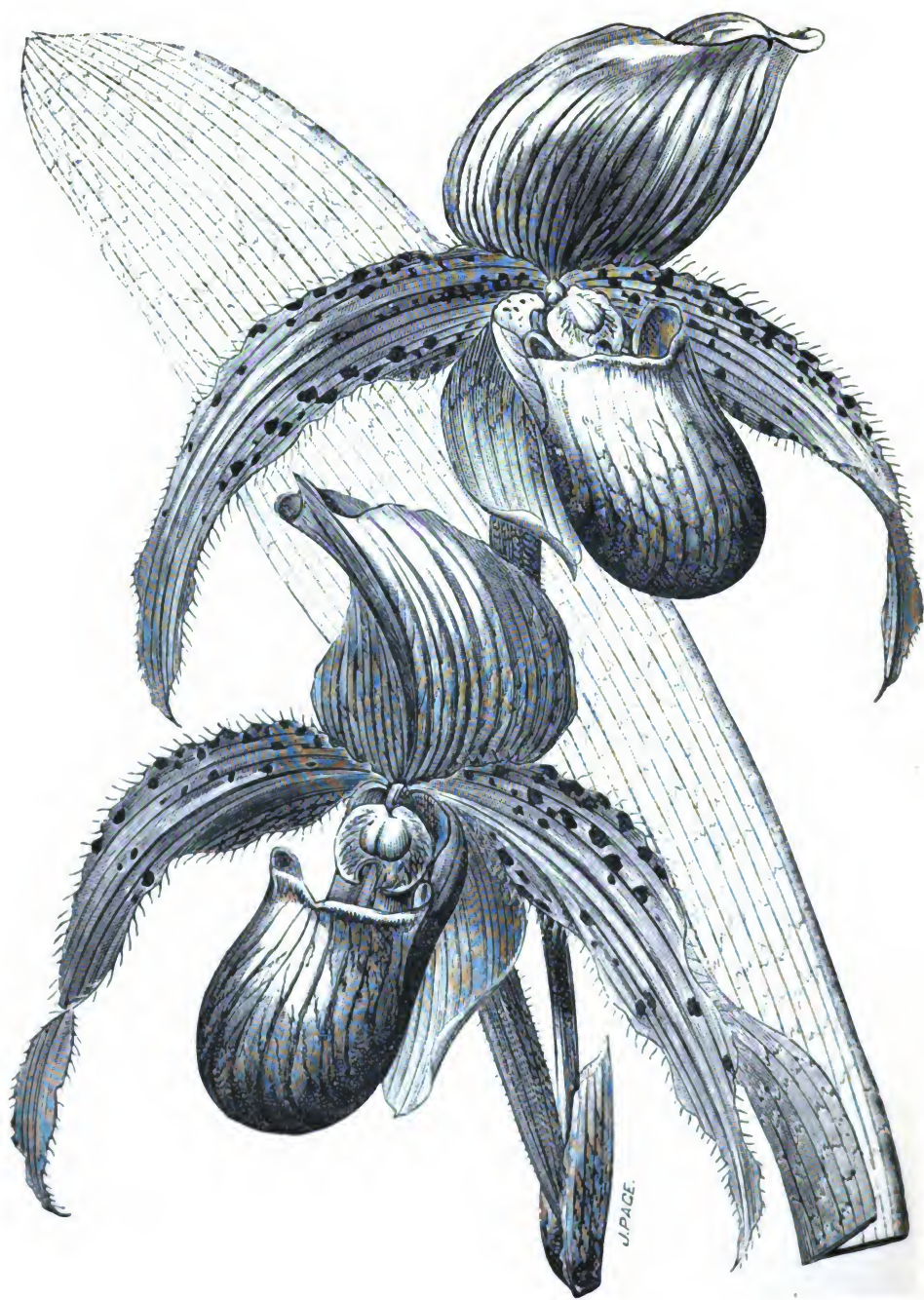
FIG.—*Warner, Sci. Orch. Pl.*, iii. t. 14; *Floral Mag.*, 2nd ser., t. 414; *Xenia Orch.*, ii. t. 161; *Gard. Chron.*, 1867, p. 1118, with fig.; *Veitch's Man. Orch. Pl.*, iv. p. 50; *Journ. of Hort.*, 1889, xviii. p. 89, f. 15; *Gard. Chron.*, 3rd ser. 1890, vii. p. 548, f. 86.



CYPRIPEDIUM SUPERBIENS.

(From the *Gardeners' Chronicle*.)

C. SUPERBIENS, *Rehb. f.*—This very handsome species may be regarded as the best of the *C. barbatum* group. It is of free growth and good habit, and



CYPRIPEDIUM SELLIGERUM.
(From Messrs. J. Veitch & Sons' Catalogue.)

has finely variegated foliage, so that when out of bloom it has a beautiful appearance; the flowers are large, with a broadly ovate acuminate, ciliated, white dorsal sepal, closely marked by longitudinal veins, which are brownish-purple at the base and green above; the oblong ligulate bluntish petals are upwards of 3 inches long and nearly an inch broad, white suffused with green towards the base, purple towards the apex, irregularly but thickly spotted with purple, and having a row of large spots on the ciliated margins; the lip is oblong-obtuse, with the claw-like base inflexed, verrucose, pale rosy-purple, the pouch of a rich brownish-purple, with the posterior angles produced and bluntish, and the front marked with coarse reticulations; the staminode is obtusely triangular, white, with the centre veined with green. It blooms in June and July, and continues a long time in flower, so that it is invaluable for home decoration or exhibition purposes. When well grown this makes a grand plant.—*Java; Assam.*

FIG.—*Warner, Orch.*, ii. t. 12; *L' Ill. Hort.*, t. 429; *Flore des Serres*, t. 1453; *Id.*, t. 1996; *Xenia Orch.*, ii. t. 103; *L' Hort. Franc.*, 1859, t. 8; *Florist and Pom.*, 1871, p. 209, with fig.; *The Garden*, iii. p. 239, with fig.; *Lindenia*, vi. t. 261; *Vitch's Man. Orch. Pl.*, iv. p. 51; *Journ. of Hort.*, 1889, xviii. p. 40, f. 7; *Gard. Chron.*, 3rd ser., 1890, viii. p. 689, f. 134; *Orchid. Album*, xi. t. 486.

SYN.—*C. Veitchianum*; *C. barbatum Veitchii*.

C. SUPERCILIARE, *Rchb. f.*—An interesting cross between *C. barbatum* and *C. superbiens*, resembling the latter parent in all its parts; the flower is, however, smaller than in that species, though the leaves are similar, being broadly ligulate and finely tessellated; the scape is hairy and one-flowered; the dorsal sepal is ovate triangular; the petals ligulate, ciliate, marked with warts and blotches except towards the tip.—*Garden hybrid.*

C. SWANIANUM, *Rchb. f.*—A very beautiful and distinct hybrid, the result of a cross between *C. Dayanum* and *C. barbatum*. It was raised by Mr. Swan, when gardener to W. Leach, Esq., Fallowfield, Manchester. The leaves are broadly ligulate, acute; in their markings they very much resemble the dark tessellated form of *C. Dayanum*, and are equally handsome. The flowers are long-stalked and about as large as those of *C. barbatum*, the dorsal sepal being large and broad, white boldly veined with purplish-crimson; the broad petals are bent down, bordered with retrorse bristles and having a few small warts on the upper edge, pale vinous red with green nerves; and the lip is large, dark crimson-purple with shining warts on the inflected sides of the base. A very beautiful plant, which should be included in every collection. There are several varieties of this plant.—*Garden hybrid.*

C. SWINBURNEI, *O'Brien*.—This is a cross between *C. insigne Maulei* and *C. Argus Moensii*, and is described by Mr. O'Brien as follows:—"With some resemblance in leaf and flower to *C. Ashburtoniae expansum*, we have in this a far more showy hybrid. The leaf is light green, reticulated with dark green, and narrower than that of *C. Ashburtoniae*; the dorsal sepal is green at the base, and with a white $\frac{1}{2}$ -inch wide margin, the green area having a number of lines made up of distinct brownish-purple spots, which are larger at the base, and get gradually smaller as the white apical margin is approached; the petals are greenish-white, tinged with red on the outer halves, and with a number of dark purplish blotches resembling those seen in *C. Argus*; the staminode is

yellow, with a green veining in the centre, and the lip green, tinged and netted with reddish-brown. It is very pretty, and was raised by Messrs. Heath & Son, of Cheltenham, who request it to bear the name of S. W. Swinburne, Esq., of Corndean Hall, Gloucestershire, a great fancier of *Cypripediums*" (*Gardeners' Chronicle*, 3rd ser., 1892, xi., p. 137).—*Garden hybrid*.

C. SYLVIA, *O'Brien*.—"This cross between *C. Curtisii* and *C. Lawrenceanum* has been flowered by the raiser, Charles Winn, Esq., The Uplands, Selly Hill, Birmingham. The flower is just intermediate between those of the parents named, and doubtless when it gets strong it will prove a very distinct hybrid. The downward-curved, thickly-spotted petals, and the closely-lined dorsal sepal, are very characteristic. The foliage is much like that of some of the forms of *C. Lawrenceanum*. The reverse cross is known as *C. Gowerianum*" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1893, xiii., p. 682).—*Garden hybrid*.

C. TAUTZIANUM, *Rehb. f.*—This fine hybrid was raised by Mr. Seden, and is dedicated to F. G. Tautz, Esq., of Ealing. "It is stated to have originated from *C. niveum* and *C. barbatum* and is said to have the dwarf habit and the comparatively narrow leaves of *C. niveum*. Those leaves of the genuine type I have never seen. 'Leaves 4 to 5 inches long by 1½ inch in breadth, of great substance, dark olive-green, showing a very faint mottling. The young growths come first very pale in colour, the leaves being flushed and margined with white, which disappears as the leaves get mature and grow darker with age.' These remarks I have obtained from Mr. F. G. Tautz himself. Inflorescence one or two flowered; peduncle dark brownish India purple; ovary dark, with short hairs; the elliptical acute median sepal is white, with very dark purple veins, some of which have veinlets radiating outside, which look remarkably neat. There are two green veins on each side of the midrib. The connate lateral sepals form a broad, wide body, nearly as long as the lip, veined on the same plan; petals spreading, ligulate, acute, ciliate on the borders, with seven dark purple nerves, the three looking towards the side sepals, green at base, all covered with much darker purple spots; lip nearly that of *C. barbatum*, very fine dark purple, full of dark warts on the involved side laciniae, pallid underneath towards the base; staminode transverse, with one tooth each side, and a very small one on mid" (*Reichenbach*, in *Reichenbachia*).—*Garden hybrid*.

FIG.—*Reichenbachia*, ii. t. 65.

C. TAUTZIANUM LEPIDUM, *Rehb. f.*—A cross between *C. niveum* and *C. Warneri*; leaves tessellated with dark green angular markings on a light green ground; scape one-flowered; dorsal sepal with a white ground, suffused with mauve, streaked with purple nerves, and dotted with purple; inferior sepal similarly coloured, but much smaller; petals suffused with mauve on a white ground; pouch rosy-pink flushed with mauve.—*Garden hybrid*.

C. "T. B. HAYWOOD," Rolfe.—A cross between *C. superbiens* and *C. Druryi*, the latter being the pollen plant. It was raised in the nurseries of Messrs. J. Veitch & Sons. Mr. Rolfe describes it as follows:—"The leaves resemble

C. superbians pretty closely, but are less distinctly tessellated, while the shape of the flowers corresponds almost precisely to the same. The colours are somewhat brighter than in that species generally, the veining of the upper sepal and petals light purple rather than green, the spots on the latter smaller, and almost confined to their basal half; the shape of the staminode, like that of the rest of the flower, is also but little modified. The influence of the pollen parent, however, is very distinctly seen in a broad, dark purple band, which extends down the centre of the dorsal sepal, and a similar but narrower one on each petal. It is named after T. B. Haywood, Esq., of Woodhatch, Reigate, an enlightened patron of horticulture, and the possessor of a well-cultivated collection of Orchids" (*Gardeners' Chronicle*, 3rd ser., 1889, v. p. 428).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1889, xviii. p. 174, f. 26; *id.*, 1889, xix. p. 510, f. 65.

C. "TENNYSON," *O'Brien*.—A cross between *C. oenanthum superbum* and *C. Dayanum*, the result being in the way of *C. Harrisianum*. The dorsal sepal is white, faintly tinged with green at the base, veined with purple; petals rosy-purple at the base, pale rose at the extremities, the edges ciliated; pouch purplish-rose; staminode bright yellow.—*Garden hybrid*.

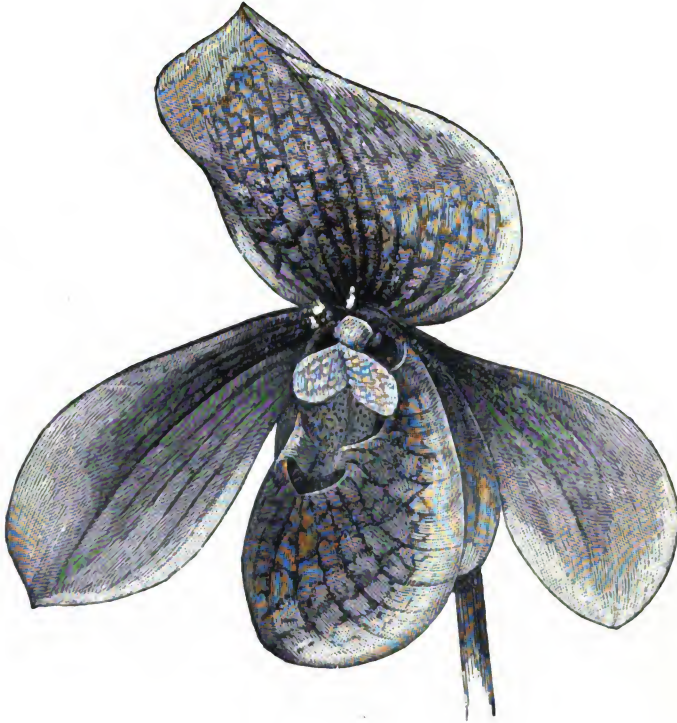
C. TESSELLATUM, *Rehb. f.*—This fine hybrid resulted from crossing *C. barbatum* with *C. concolor*, and is described as follows:—"The leaves have the form of those of *C. concolor*, and the marking of those of *C. barbatum*. The bloom-stalk is longer than that of *C. concolor*, but not much. The flower is at least a half larger than that of the just-named mother species. The petals are narrower and longer, and they have a ciliate margin. The lip is much more in the way of that of *C. barbatum*, having on each side an inflexed round lobe in lieu of the nearly falcate one of *C. concolor*. The staminode is also quite that of *C. barbatum*, when the two sepals would be those of *C. concolor*, providing the very projecting nervation was not that of *C. barbatum*. The ground colour of the flower is a certain whitish, with a greenish hue. I do not see a trace of the characteristic, quite unique yellow of the Rev. C. Parish's glorious discovery; the upper sepal is washed with the colour of port wine; the petals are washed with the same light port-wine colour, with transverse bars and lines of black dots; the lip is almost wholly brownish, except the greenish-white under side, and the staminode is pallid, with numerous brown and a few central green bars, covered with hairs" (*Reichenbach*, in *Gardeners' Chronicle*, n.s., 1875, iv. p. 614).—*Garden hybrid*.

C. TESSELLATUM PORPHYREUM, *Rehb. f.*—A cross between *C. concolor* and *C. barbatum*. It is one of the most distinct and beautiful hybrids we know, and we have had it with as many as three flowers on a spike; it is a very slow growing plant, and therefore likely to be rare for a long time; the leaves are prettily tessellated, and the scape one to three flowered; the flowers, whilst partaking of the size and shape of the parents, have a ground colour of pale yellow, and are heavily suffused with bright rosy-purple. Flowers in the summer months. It was raised in the nurseries of Messrs. James Veitch & Sons.—*Garden hybrid*. [*For Illustration see page 308.*]

FIG.—*Lindenia*, i. t. 18; *Journ. of Hort.*, 1888, xvii. p. 382, f. 43.

C. THIBAUTIANUM, *Rchb. f.*—A cross between *C. Harrisianum* and *C. insigne Maulei*. Leaves faintly tessellated; scape one-flowered, dorsal sepal pale green, with a broad marginal border of pure white, dotted and spotted along the veins with deep brown; inferior sepal smaller, pale green, sparingly dotted with brown; petals reddish-brown, bordered with buff-yellow; pouch reddish-brown, passing to pale brown beneath.—*Garden hybrid*.

C. TONKINENSE.—See *C. CONCOLOR TONKINENSE*.



CYPRIPEDIUM TESSELLATUM PORPHYREUM.

(From the *Journal of Horticulture*.)

C. TONSUM, *Rchb. f.*—Leaves large, tessellated with deep green, on a pale green ground on the upper side, sparingly flushed with purple beneath; scape tall, one-flowered, flowers large and bold, but much wanting in colour; dorsal sepal broadly-cordate, greenish-white, streaked with veins of deep green; inferior sepal much smaller, but similar in colour; petals greenish-white, veined with deep green, and sparingly flushed with purple, and bearing a few small spots of black; pouch large and obtuse, green, tinged with brown. Blooms in autumn.—*Sumatra*.

C. VAN HOUTTEANUM, *Hort.*—This hybrid appears to have been found amongst a number of seedlings of *C. Dauthierii*, which flowered in the collection of M. Jules de Cock, of Ghent, and was sold for £100 to M. Jules Hye, of Ghent.

a distinguished *Cypripedium* collector. Leaves bright green, tessellated with dark green and suffused with red at the base; peduncle short, hairy, rose-coloured; the flower is very beautiful and quite distinct from anything else; the dorsal sepal is broad, white suffused with vinous purple, violet in the centre, and veined with greenish-yellow; petals short, broad, spatulate, ground colour white, shaded with a beautiful rosy-purple; lip rosy-purple, greenish at the base and at the back; staminode white suffused with rose, green in the centre.—*Garden hybrid*.

FIG.—*Lindenia*, iii. t. 130.

C. VARIOPICTUM, *Rehb. f.*—This hybrid was raised by R. H. Measures, Esq., Streatham, between *C. Lawrenceanum* and *C. Spicerianum*, and is a very effective plant. "The leaves are shaped like those of *C. venustum*, in colour green with darker, often flexuose margin; peduncle thin, very long, dark purplish-brown; bracts ancipitous, ligulate acute, green with blackish-purple lines and spots; it is altogether much shorter than the reddish-brown ovary; dorsal sepal elliptic acute, whitish-green at the base, with radiating veins; lateral sepals shorter than the lip, whitish-ochre, very pale, with brown veins; petals deflexed, ligulate acute, with dark purple midline, superior half yellowish, partly covered with dark spots; anterior part brownish-purple, superior margin very hairy; lip light ochre, purple outside; staminode transverse elliptical, the front having large lateral teeth, with minute central apiculus; the centre is white, with green dendritic marks; sides purple." (Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 407).—*Garden hybrid*.

C. VEITCHIANUM.—See *C. SUPERBIENS*.

C. VENUSTO-SPICERIANUM, *O'Brien*.—This hybrid was raised by D. O. Drewitt, Esq., between *C. venustum* and *C. Spicerianum*, the latter being the pollen plant. "The general appearance and habit is that of *C. Spicerianum*; leaf greyish-green on the upper side, mottled with purple on the under; flower nearly 4 inches across the petals, which latter are yellowish-green, with lines of chocolate dots, the most prominent being the middle line; petals tinged with red on the outer half; upper sepal formed much as in *C. venustum*, green at the lower half, white on the upper half, a purple band running up the middle nearly to the apex, and purple dots on the green at the base; pouch larger than in *C. Spicerianum*, dull creamy-yellow, veined with green and tinged with purple, the inside beautifully and densely spotted with purple; staminode white, tinged with purple, and veined in the centre with bright green; lower sepals pale greenish-yellow, with green lines, unspotted" (O'Brien, in *Gardeners' Chronicle*, 3rd ser., 1889, v. p. 394).—*Garden hybrid*.

C. VENUSTUM, *Wallich*.—A handsome species of the acaulescent group. The leaves are light green mottled with deep green, and on the under side green mottled with purple; the dorsal sepal is greenish-white with purple stripes; the petals ligulate, ciliate, warted with purple, greenish with purple tips; and the lip yellowish veined with green and flushed with purple. It is a pretty cool house species, and is very useful for cutting.—*Sylhet*.

FIG.—*Bot. Mag.*, t. 2129; *Bot. Reg.*, t. 788; *Hook. Exot. Fl.*, t. 35; *Loddiges, Bot. Cab.*, t. 585; *Warner, Scl. Orch. Pl.*, ii. t. 24; *Hart. Parad.*, i. t. 4; *Rehb. Fl. Exot.*, t. 100.

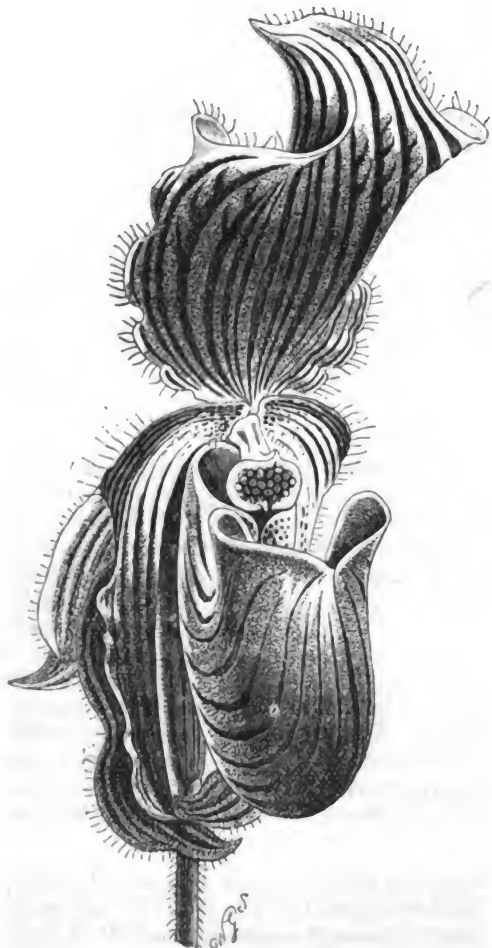
C. VENUSTUM PARDINUM, *Hort.*—This variety on its first introduction was two-flowered, but many of the forms now called *pardinum* appear to produce but one flower; it differs chiefly in the dorsal sepal being of a purer white, and in the lip being of a brighter colour. Blooms in the winter months.—*Northern India*.

FIG.—*Gard. Chron.*, 3rd ser., 1887, i. p. 382, f. 76; *Floral Mag.*, x.s., t. 51.

C. VENUSTUM SPECTABILE, *Williams.*—A very handsome form of this useful winter-flowering species. The leaves are beautifully mottled with green; the flowers are medium sized, produced singly, and are far handsomer than

those of the type; the dorsal sepal is white broadly striped with green; the petals greenish white streaked with deeper green, and tipped with rosy-red; and the lip greenish-yellow tinged with rose.—*Sylhet*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 24.



CYPRIPEDIUM VEXILLARIUM. (Natural size.)
(From the *Gardeners' Chronicle*.)

C. VERNIXIUM, *Rehb. f.*—

This is a hybrid of the stemless group, raised between *C. Argus* and *C. villosum*. The leaves are as large as those of *C. villosum*, but have tessellated markings very faintly developed; the scape is stout, covered with short hairs; the flowers present a remarkable combination of ochreous-brown, crimson, and green, with fainter spots on the petals than in *C. Argus*, and having the varnished surface of *C. villosum*; the dorsal sepal is light green, with darker nerves, having rows of black spots along their basal parts; the petals are ligulate blunt undulate, with bristles on the upper border, washed with warm dark brown and shining; and the lip is light greenish-olive, with a brown face and conspicuous nervation. Raised by Mr. Seden.—*Garden hybrid*.

C. VERRAETIANUM. — See
C. EURTALE.

C. VEXILLARIUM, *Rehb. f.*—This is an elegant hybrid, raised by Mr. Dominy, and is the result of a cross between *C. Fairrieum* and *C. barbatum*, the flowers



CYPRIPEDIUM VEXILLARIUM.
(From Messrs. J. Veitch & Sons' Catalogue.)

being exactly intermediate. It is remarkable for its dwarf habit; the leaves are pale green, with a few darker markings; the flowers are large, with the dorsal sepal whitish tinged with green towards the base, suffused with light purple, and marked with port-wine coloured veins; the petals are deflexed, bluntly acute, the edges slightly wavy and ciliate, purplish tinged with green, and furnished with a few warts; and the lip is large, light brown veined and tinged with green. It is generally a summer-flowering plant, but we have had it in flower as late as December and January.—*Garden hybrid*.

FIG.—*Veitch, Cat.*, 1879, p. 10, with fig.; *Florist and Pom.*, 1880, p. 13, with fig.; *Gard. Chron.*, N.S., xix. p. 781, f. 135 (marked *selligerum* by error); *The Garden*, v. p. 103, with fig.; *L'Orchidophile*, 1883, p. 600; *Gard. Chron.*, 3rd ser., 1887, i. p. 456, f. 87; *Veitch's Man. Orch. Pl.*, iv. p. 100; *Lindenia*, vii. t. 309; *Orchid Album*, x. t. 447; *Orchid Review*, i. p. 297, f. 13.

C. VEXILLARIUM GRANDIFLORUM, *Hort.*—This variety is much stronger in its habit of growth than the preceding, and the flowers are larger and brighter in colour.

C. VILLOSUM, *Lindley*.—A desirable species of the acaulescent group. The leaves are of a light green colour, freckled on the lower exterior part with dark spots; the scapes are villose, about 1 foot high, producing solitary flowers, often measuring 5 inches across, and having a fine glossy appearance over their whole surface, which is orange-red intermixed with light green and dark purple, the dorsal sepal being green. It blossoms during January and February, but may, by retarding, be kept back till April and May, and continues from six to eight weeks in perfection. This makes a fine subject for exhibition, on account of its distinct colour, and its long continuance in flower. The plant succeeds well in the cool house with the *Odontoglossums*, &c.—*Moulmein and Tonghoo Mountains, Bhotan*. [For Illustration see page 312.]

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 30; *Prescatorea*, t. 48; *Flore des Serres*, t. 1475; *L'Il. Hort.*, t. 126; *Florist and Pom.*, 1870, p. 211, with fig.; *Id.*, 1882, p. 35, with fig.; *The Garden*, iii. p. 415, with fig.; *Lindenia*, iii. t. 132; *Veitch's Man. Orch. Pl.*, iv. p. 55; *Gard. Chron.*, 3rd ser., 1890, viii. p. 688, f. 133; *The Garden*, 1891, xxxix. p. 568, t. 810.

C. VILLOSUM AUREUM, *Williams*.—A remarkably distinct and fine variety. The flowers are 6 inches across, and have the upper part of the dorsal sepal bright yellow, broadly margined with white.—*Moulmein*.

C. VILLOSUM BOXALLI.—See C. BOXALLI.

C. VILLOSUM GORTONI, *O'Brien*.—Is said to differ from the type by the colour of its flowers. "The upper sepal has a narrow purplish-crimson band, extending up the middle to the bright emerald green apex, and a clear white margin, the whole of the remaining surface being flaked and tinged with light purple, and veined with darker purple." Named after Dr. Gorton, of Maida Vale.

C. VILLOSUM MEASURESIANUM, *O'Brien*.—The upper sepal has a white ciliate margin, below that the colour is purple on a greenish-yellow ground, the base having black blotches on a glossy purple body colour; the petals have the dark shining Indian yellow on their upper halves as in ordinary *C. villosum*,

the lower halves being strangely mottled with purple on a light greenish-yellow ground; the labellun is formed as in *C. Bozalli*, creamy-white with the upper portion of the face rosy-purple. It was named in honour of R. H. Measures, Esq., of Streatham.



CYPRIPEDIUM VILLOSUM.

(From the *Gardeners' Chronicle*.)

C. VIPANI, Rolfe.—A hybrid between *C. philippinense* and *C. niveum*, raised by Captain Vipan, of Wansford. "The lip is pure white, except a few minute dots on the side lobes, and a faint trace of yellow on the nerves; the sepals and petals are also white, with a trace of yellow-green at extreme base, but the upper sepal has eleven, and the petals each nine longitudinal stripes of bright purple; the lower sepals are but faintly striped. As to shape, the upper sepal is exactly ovate, sub-obtuse, $1\frac{3}{4}$ inch long, by $1\frac{1}{4}$ inch broad; the petals linear-oblong, a little narrower upwards, and sub-obtuse, $2\frac{1}{4}$ inches long, by $\frac{1}{2}$ inch broad; the lip laterally compressed, as in the mother plant, otherwise strongly

stamped with the character of *C. niceum*; the staminode broadly obcordate, convex, hairy, especially at the sides, and yellowish-white, with light green reticulated nerves. It is remarkably like *C. Aylingi* in colour, except that the purple is in clear stripes, not rows of dots, a character clearly derived from the mother plant, as is also the markedly compressed lip" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, vii. p. 792).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 421, f. 73; *Gard. Mag.*, 1892, p. 306.

C. VITTATUM, *Rehb. f.*—This old species appears to be in cultivation under three different names. The leaves are long, linear lanceolate, margined with yellow; dorsal sepal oblong obtuse, yellowish-green, striped with vinous red; inferior sepal much larger, greenish-white; petals reflected, undulated, and twisted, enlarged at the base, where they are green, margined with violet-purple, the lower two-thirds of the same colour; lip green, suffused with reddish-brown. Introduced in 1875 by Mr. Linden.—*Brazil*.

FIG.—*L'Orchidophile*, 1890, p. 111 (*C. Binoti*).

SYN.—*C. Binoti*; *Selenipedium vittatum*; *S. vittatum breve*; *S. vittatum Binoti*.

C. WALLISII, *Rehb. f.*—A very distinct and beautiful plant belonging to the *C. caudatum* section. The leaves are ligulate, acute, and leathery, and the stems three to five flowered; the sepals are elongate ovate, pale green distinctly striped over their entire surface with bright green, and having a few green spots in the centre; the petals are about 8 inches long, broadish for about 2 inches at the base, and then passing into a very narrow tail, white strongly veined with green, the apical portion tinted with very pale brown; the lip is large and handsome, white spotted and veined with crimson, its mouth margined with yellow. We believe this was first flowered by C. Winn, Esq., The Uplands, Selly Hill, Birmingham.—*Ecuador*.

FIG.—*Xenia Orch.*, ii. t. 181; *Lindenian*, iii. t. 131; *Orchid Album*, viii. t. 380.

SYN.—*Selenipedium Wallisii*; *C. caudatum album*.

C. WARNERIANUM.—See *C. barbatum Warnerianum*.

C. WARNERO-SUPERBIENS, *Hort.*—A cross, as its name indicates, between *C. barbatum Warnerianum* and *C. superbiens*. "The plant is intermediate between its parents. Foliage 5 inches long, acute, broad near base, reticulated with dark green on a pale ground; the flowers are solitary, on pubescent brown scapes, the dorsal sepal proportionately large, white with radiating green nerves, and a stain of vinous red across the centre; the inferior sepal is much smaller, and of the same colour; the petals are narrow, white, tinted with vinous-red at the apices, and closely veined with green; ciliate and warted on the margins, with an occasional spot on the surface, and some brown specks near the base; the lip is of a rich glossy-brown colour, slightly concave below the opening, and speckled on the infolded lobes; the staminode is of a pale green colour, with darker green reticulations" (R. M. Grey, in *Gardeners' Chronicle*, 3rd ser., 1892, xii., p. 301).—*Garden hybrid*.

— **C. WILLIAMSIANUM**, *Rehb. f.*—A very fine hybrid, and according to Reichenbach the best of the crosses obtained by R. Warner, Esq., reminding one both of *C. villosum* and *C. Harrisianum*. The leaves are distinctly tessellated, and the

scape is light brown and hairy; the flowers have the dorsal sepal oblong acute, very large, white with a dark blackish brown centre bar and prominent green nerves; the petals are oblong-ligulate, acute, ciliate on both margins, and having numerous small black dots in rows near the base, a dark brown median line of a reddish-brown hue along the upper side, and white with a coppery tint on the lower, the chief nerves green on both halves, but nearly vanishing in the upper; the lip is yellowish beneath, light brown above, with an ochre-coloured border.—*Garden hybrid*.

FIG.—*Orchid Album*, viii. t. 365.

C. WINNIANUM, *Rehb. f.*—This distinct hybrid is the result of a cross between *C. villosum* and *C. Druryi*, and was described by the late Professor Reichenbach in the *Gardeners' Chronicle*, 1886, xxv. p. 362. It was raised in the nursery of Messrs. Jas. Veitch & Sons. "The leaf at hand has the breadth, the dark mark at the base, and that peculiar dark, nearly glaucous green of *C. villosum*; the peduncle has dark red hairs, and the ovary is quite as hairy, yet the hairs are neither as long nor as crowded as those of *C. villosum*; the bract is much shorter than the ovary, and has some dark purplish spots at the base, longer than it usually is in *C. Druryi*; the upper sepal is oblong-acute, not broad, whitish-yellow, with the centre of dark indian-purple; the lateral sepals form a far smaller body, much shorter than the lip, of the lightest ochre colour; petals are nearly as in *C. villosum*, reddish on outer side, with a long and not too narrow brown line on the mid-line, borrowed from *C. Druryi*, and with numerous small brown spots at the base; the lip is that of *C. villosum*, and so is the staminode, yet it is broader than in *C. villosum*, though the shape is the same excepting in breadth."—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvii., p. 71, f. 12.

C. YOUNGIANUM, *Rolfe*.—"A hybrid raised from *C. superbiens*, fertilised with the pollen of *C. Roebellini*, and quite intermediate in character; the leaves are bright green, reticulated with darker green nerves; scape two-flowered; dorsal sepal ovate, acute, with numerous purple-brown nerves on a light ground; petals drooping, nearly flat, over 4 inches long, ciliate, with numerous light maroon spots on a pale ground, passing into yellowish-green near base; lip closely resembling that of *C. superbiens*; staminode broadly rounded, apex with three minute teeth, reticulated with green on a pale ground, base and sides pubescent. This graceful and pretty hybrid was raised by Messrs. F. Sander & Co., of St. Albans, and flowered for the first time during 1890, when it was exhibited at a meeting of the Royal Horticultural Society on July 8th, and received an award of merit. The more delicate colours, and the numerous spots of the petals in the present hybrid are clearly derived from *C. superbiens*, whose influence is very apparent, especially in the lip, which is almost unmodified. On the other hand, the more elongated greener leaves, the two-flowered scape, the more elongated petals, and the hairy sides of the staminode are as clearly derived from the pollen parent. This makes at least the sixth hybrid which has been derived from *C. philippinense*, while from *C. superbiens* no less than a dozen are known" (R. A. Rolfe, in *Reichenbachia*).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxiii. p. 405, f. 78; *Reichenbachia*, 2nd ser., i. t. 31.

A SELECTION OF TERRESTRIAL CYPRIPEDIUMS THAT MAY BE GROWN
EITHER IN A FRAME OR GREENHOUSE.

All these can be cultivated in a cool greenhouse or frame, either planted out or in pots. Indeed, many of the terrestrial kinds enumerated below will succeed well in the open air if a little care is bestowed upon the selection and preparation of the situation. The number of species we have here enumerated is not great; but in the course of a few years they might receive numerous accessions if plant-loving ladies and gentlemen, as well as gardeners, would take up the growth of these beautiful plants. Any one having friends in North America, Japan, or Siberia, should strongly impress upon them the desirability of sending home the tubers of any species they may find. By this means we should soon make many valuable additions to our collections of hardy and half-hardy *Cypripediums*.

Culture.—The species and varieties described in the following selection are all terrestrial, and in cultivation must not be elevated above the rim of the pot, as is the custom with the epiphytal kinds, but there must be a space of an inch or more from the rim to the soil, to allow of a sufficient quantity of water being given at one time. The soil best adapted for their growth is a mixture of good fibrous loam, turfy peat and silver sand, adding more or less of each, according to the peculiar habitat of the particular plant to be potted. They must all have good drainage, and the addition of lumps of sandstone or of charcoal, and in the case of some, broken pieces of limestone, to the soil will have a beneficial effect, serving to keep the mass open, and the roots cool and moist. They are mostly propagated by division of the roots, just as the fresh growth commences; and though they all require a season of rest, they must never be allowed to become dry at the roots, nor must the temperature be allowed to be lower in winter than from 35° to 40°—not that certain kinds will not withstand some few degrees of frost, but we believe they will all thrive far better if not subjected to such extremes. In the growing season, abundance of water should be poured round and about them, to keep a moist and cool atmosphere in which they delight.

/ **C. ACAULE.**—See *C. HUMILE*.

C. ARIETINUM, *R. Brown*.—This is a remarkable species, having free lateral sepals; the lip is white, curiously chequered with bright rose; the upper sepal

is ovate, the lower sepals and the petals nearly linear, dull green, streaked with reddish-brown.—*Canada*.

FIG.—*Bot. Mag.*, t. 1569; *Lodd. Bot. Cub.*, t. 1240; *Sweet Brit. Fl. Gard.*, t. 213; *L'Orchidophile*, 1887, p. 175.

C. CALCEOLUS, Linn.—This, though a British species, is so rare and beautiful, that it well deserves a place in every collection. It grows about a foot high; the leaves are oval, smooth, and dark green; the flowers yellow and brown.—*Europe*.



CYPRIPEDIUM
CALCEOLUS.

FIG.—*Engl. Bot.*, t. 1; *Lodd. Bot. Cub.*, t. 363; *L'Orchidophile*, 1887, p. 175.

C. CANDIDUM, Willd.—An elegant little species which at present is rare in cultivation. The leaves are somewhat lanceolate, dark green; the flowers are produced singly and are of moderate size, the sepals and petals green with brown streaks, the latter slightly twisted, and the lip is somewhat oblong, white, spotted with brownish-purple inside. It is a very desirable plant.—*North America and Canada*.

FIG.—*Flore des Serres*, t. 962.

C. GUTTATUM, Swartz.—A perfect little gem, making a stem about three inches high, with two broad ovate elliptic leaves and a single flower, which is large, white, most beautifully blotched and spotted with rich purple. It is found in boggy, swampy places.—*Canada and Siberia*.

FIG.—*Flore des Serres*, t. 573.

C. HUMILE, Salisb.—A pretty stemless species, the oblong slightly hairy light green leaves of which are produced in pairs; the large and beautiful flowers are borne singly upon short scapes from the centre of the plant, and have a very large rose-coloured lip veined with deeper red, the sepals purple; it flowers in May, and retains its beauty for a considerable time.—*North America*.

FIG.—*Bot. Mag.*, t. 192; *Sweet Brit. Fl. Gard.*, v. t. 161; *The Garden*, 1892, xlii. p. 386, t. 881.

SYN.—*C. acule.*

C. IRAPEANUM, Llave.—A most beautiful tall-growing species, with large flowers, 4 to 5 inches across, of a bright golden yellow. Being somewhat tender it should be grown where protection can be given to it. The *Flor de Pelicano* of the Mexicans.—*Upper Mexico*, where it is found at an elevation of 2,000 to 5,000 feet.

FIG.—*Bot. Reg.*, 1846, t. 58.

C. JAPONICUM, Thunb.—A very beautiful hardy species, which has a creeping scaly rhizome, and a pair of flabellate leaves. The flower segments are greenish sprinkled with reddish dots, the lip is whitish suffused with pink. It should be potted in light sandy loam, and have plenty of water during the growing season.—*Japan*.

FIG.—*Blume, Orch. Ind. Arch. et Jap.*, t. 59; *Gard. Chron.*, N.S., iii. p. 625, f. 129; *Flore des Serres*, tt. 2064-5; *L'Orchidophile*, 1887, p. 175.

C. MACRANTHUM, Swartz.—One of the finest and most distinct of the terrestrial section. It grows about 10 inches high, has oblong acute leaves, and produces its charming large purple flowers early in June.—*Siberia*; *Altai*.

FIG.—*Bot. Mag.*, t. 2938; *Bot. Reg.*, t. 1534; *Gmel. Sibir.*, i. p. 2, t. 1; *Hooker, First Cent. Orch. Pl.*, t. 100; *L'Orchidophile*, 1887, p. 175.

C. PARVIFLORUM, Salisb.—A handsome fragrant species, somewhat resembling *C. Calceolus*, but taller; the stem and oval acuminate leaves are slightly downy, the sepals and petals a little twisted, yellow streaked with reddish-brown, the lip large and round, and wholly of a rich yellow.—*North America*.

FIG.—*Bot. Mag.*, t. 3024; *Sweet, Brit. Fl. Gard.*, i. t. 80; *L'Orchidophile*, 1887, p. 175.

C. PUBESCENS, Willd.—This fine plant makes a stem a foot high or more, with large oval acute downy light green leaves, and produces in June its charming yellow and purple flowers, which continue in perfection for a very long time.—*North America*.

FIG.—*Bot. Mag.*, t. 911; *Lodd. Bot. Cab.*, t. 895; *L'Orchidophile*, 1887, p. 175; *The Garden*, 1892, xlii. p. 386, t. 881.

C. SPECTABILE, Swartz.—A superb plant, growing from 1 to 2 feet high, and supporting large downy leaves, with beautiful rose and white flowers. It generally blooms in May and June, and makes one of the finest plants for exhibition purposes, the flowers being so distinct from those of any other *Cypripedium*.—*North America*.

FIG.—*Bot. Reg.*, t. 1666; *Bot. Mag.*, t. 216; *Revue Hort. Belg.*, 1879, p. 241 (plate); *L'Orchidophile*, 1887, p. 175.



CYPRIPEDIUM SPECTABILE.

C. SPECTABILE ALBUM, Sweet.—This charming variety resembles the preceding in habit of growth, and also in its foliage and inflorescence, but its large flowers are of a uniform creamy white, and are very attractive.—*North America*.

FIG.—*Sweet, Brit. Fl. Gard.*, iii. t. 240.

CYRTOCHILUM.—SEE ONCIDIUM.

CYRTOPERA, Lindley.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

A small genus of terrestrial plants, containing a few very handsome species. It is united by Bentham and Hooker with *Cyrtopodium*, from which it differs in its simple inflorescence, and in the lateral sepals being

wider at the base and connate with the foot of the column. They have fleshy stems, in some cases short and tuberous, in others more elongated and fusiform, long thin plaited dark green leaves, and flowers generally of a showy character in erect spikes springing from the root. The few known species are widely scattered, occurring in India, Madagascar, South Africa, Peru, and the West Indies.

Culture.—These plants resemble *Bletias*, and should be treated in the same manner. They should be potted in a mixture of turfy loam, peat, and sand, but not elevated upon a cone above the rim of the pot. During the growing season they should be placed in the East Indian house; but during rest a cool and moderately dry atmosphere is best.

C. FLAVA, *Lindley*.—A very pretty plant, not much known amongst Orchid-growers. It has somewhat the appearance of a *Bletia*, with long lanceolate plicate leaves, and a tall many-flowered scape, 2 to 3 feet high, bearing large flowers, the sepals and petals of which are rich yellow, and the lip a rather paler yellow.—*Northern India*.

C. REGNIERI, *Rehb. f.*—This species was introduced by M. A. Regnier, of Paris. It has erect spikes bearing about six pale yellow flowers; lip streaked with orange.—*Siam*.

FIG.—*L'Orchidophile*, 1886, p. 323.

C. SANGUINEA, *Lindley*.—A handsome plant, somewhat variable in its colouring, with thick oblong annulated tubers, from which springs up an erect leafless scape $1\frac{1}{2}$ foot high, with sheathing bracts on the lower part, and above a raceme of numerous red-purple flowers 2 inches in diameter, with a three-lobed limb produced into a short blunt spur behind, the front lobe expanded, roundish, white bordered with rose, and the side lobes also rosy, having each a dark spot inside.—*Sikkim Himalaya*, tropical region, at 3,000 to 5,000 feet elevation.

FIG.—*Bot. Mag.*, t. 6161.

CYRTOPODIUM, *R. Brown.*

(Tribe Vandace, subtribe Cyrtopodieae.)

These are large-growing plants, yet are well worth cultivating, especially where room is not an object, for if well grown they are noble-looking objects even when not in bloom. They are terrestrial herbs, with fusiform fleshy stems bearing a few long plicately-veined leaves, contracted into a petiole, which becomes dilated and clasps the stem; the large compound radical panicles bear moderate-sized showy flowers, the lip of which has a geniculate claw, forming with the base of the

lateral sepals a short mentum or chin. The flowers grow up with the young growth in spring. The species are comparatively few in number, and are found in the West Indies and Tropical America.

Culture.—We well remember a splendid plant of *Cyrtopodium punctatum*—one which Dr. Lindley regarded as a grand specimen—being exhibited by us at Chiswick many years ago. To grow it in like manner would require a large pot or tub and plenty of room, but it well repays the cultivator if space can be allowed. The best soil is a rich fibrous loam and rotten dung to produce vigorous growth, and when the plant is strong enough it will flower; after the growth is completed give it a long rest with little water, until it shows signs of growth in spring, when water should be applied to the roots freely and more heat given. The flowers are produced from the young growth just after starting in spring. The plants require the heat of the East Indian house when growing; but after they have finished their growth the heat of the *Cattleya* house will be sufficient.

C. ALICIAE, *Lind. et Rolfe*.—This new species was introduced by the Horticulture Internationale from the district of Pernambuco. Its flowers are smaller than those of the other species of this genus, and are produced in the autumn months. It is allied to *C. cristatum*. The bracts are yellowish-green in colour, covered with numerous reddish-brown spots. The flowers are of a bright yellowish-green; the sepals and petals covered with numerous reddish-brown spots; the lip is lighter and less spotted, saving the crest, which is yellow, covered with a number of small reddish-brown spots.—*Brazil*.

FIG.—*Lindenia*, viii. t. 371.

C. ANDERSONI, *R. Brown*.—A noble Orchid, of easy culture, requiring plenty of heat and moisture when growing. The fleshy stems grow 5 feet high, with long lanceolate plicate leaves sheathing at the base. The scape, which grows up in spring before the leaves, reaches 3 feet in height, and bears a panicle of showy flowers, of which the sepals and petals are about equal in size, yellow, with a faint tinge of green, and the lip is three-lobed, rich yellow, with the large side lobes erect and the frond lobe spatulate.—*West Indies*.

FIG.—*Bot. Mag.*, t. 1800; *Lodd. Bot. Cab.*, t. 121; *Bot. Reg.*, 1841, t. 8.

C. CARDIOCHILUM, *Lindley*.—A tall-growing plant, with stout fusiform curved stems, sheathed by the membraneous base of the linear-lanceolate acuminate plicate leaves. It has a forked raceme of showy yellow flowers, tinged with green, on a tall scape which springs from the root quite distinct from and taller than the leafy stems. The flowers are nearly 2 inches across,

and being of a bright yellow with broad sepals and petals, they are very showy; the lip is brighter yellow, recurved, with the front lobe concave; they grow in a long erect raceme, forked at the base, which terminates the scape.—*India*.

FIG.—*Orchid Album*, iv. t. 176.

C. PUNCTATUM, *Lindley*.—This, like *C. Andersoni*, is a noble plant, but it is not so tall, and is a more profuse bloomer. It has cylindrical slightly compressed stems 2 feet or more in length, crowned with a tuft of six or eight long linear-lanceolate curved leaves, which render it a striking object in an Orchid collection, even when out of bloom. The scape arising from the base of the stem is erect, nearly 3 feet high, spotted with purple-brown, and bearing a panicle of large handsome flowers, which are yellow, spotted with red, the lip having a broad red-purple margin; they are produced in April and May. In addition to the flowers the large bracts at the base of each branch are also marked in the same manner as the sepals and petals, which greatly increases the display of colour.—*West Indies*; *Brazil*.

FIG.—*Bot. Mag.*, t. 3507; *Sertum Orch.*, t. 12; *L'Orchidophile*, 1885, p. 270; *Orchid Album*, v. t. 202; *Lindenia*, viii. t. 344; *Veitch's Man. Orch. Pl.*, ix. p. 38.

SYN.—*Epidendrum punctatum*.

C. PUNCTATUM SAINT LEGERIANUM, *Hort*.—This variety was discovered in Central Paraguay by M. de St. Leger, and was first exhibited by Mr. Cuming, gardener to A. H. Smee, Esq., of Hackbridge, before the Royal Horticultural Society on March 9th, 1886, when it was awarded a 1st Class Certificate. It is a superior form of the type, having brighter markings on the bracts and flower segments.—*Paraguay*.

FIG.—*Journ. of Hort.*, 1886, xii. p. 255, f. 46; *Gard. Chron.*, 3rd ser., 1888, iv. p. 181. f. 20.

DENDROBIUM, *Swartz*.

(Tribe *Epilendreae*, subtribe *Dendrobieae*.)

A very extensive as well as magnificent genus of Orchids, partly consisting of plants with tall jointed stems, bearing lateral or pseudo-terminal racemes of flowers, and partly of pseudo-bulbous species which have their floral racemes terminal. Some of the species produce very large flowers, which are delicate in colour, and delightfully fragrant; some of them blossom very freely, and are very ornamental; some are evergreen, retaining their leaves all the year round, whilst others are deciduous, flowering on the ripened leafless stems. Being, however, a large genus, comprising some hundreds of species, it contains also many plants of but little interest to the amateur, though well deserving cultivation in a botanical collection. Those we describe below are among the finest in cultivation. Their chief peculiarity consists in the base of the

lip being more or less contracted into a claw, lying upon or adnate to the foot of the column. They are scattered abundantly over India, and more sparingly in the South Pacific Isles, Australia, New Guinea, and Japan. Since the last edition of this work was published a number of hybrids have been raised in this country, some of which are very beautiful and free flowering; the best of them are included below.

Culture.—So extensive a genus must needs be variable in habit, and in the treatment the several species require. Some of them are compact in growth, while others are straggling; and some are very graceful, especially when cultivated in baskets and suspended from the roof, in order that their pendent stems may hang down and exhibit the flowers to the best advantage. All the drooping kinds, indeed, require to be grown either in baskets, or on blocks of wood. Though requiring different treatment, they may all be successfully cultivated with proper attention. The majority of the species are found in India and the Indian Islands growing on the branches of trees—frequently such as overhang streams of water.

To grow these plants to perfection, they must have decided periods of rest and of growth. It is quite necessary for the production of a good crop of flowers that they should make strong stems or pseudobulbs, and it is equally essential that these growths should be well ripened. Some of the sorts are best grown in pots, with peat and good drainage; others do best on blocks of wood. Nearly all of them should be placed in the East Indian house during their period of growth, as they require a good supply of heat, a moist atmosphere, and a liberal quantity of water at the roots; in fact, the moss or peat should never be allowed to get dry while they are making their growth. After the growth is finished, they may be allowed a good season of rest by moving them into a cooler house; and during the time they are in the cool house they must have very little water, only just enough to keep the stems from shrivelling. This is the only way to make them grow vigorously and flower freely. When they begin to make new growth they should be moved back into a warmer house, and treated as above described. They generally commence to grow after their flowers have faded. These remarks apply to the East Indian kinds.

There are many of the Australasian species which succeed admirably in a cool house; but some few even from that continent enjoy the treatment of the East Indian house during the season of growth, and we have found *D. bigibbum*, *D. superbiens*, *D. Goldiei*, *D. Phalaenopsis*, and a few others do best in a stove where *Crotons* were grown and where no shading was used. When the growth is completed, they should be gradually inured to a cooler temperature, and supplied with a reduced quantity of water. In the case of *D. speciosum* and *D. speciosum Hillii* the plants should be removed to the open air for a few weeks towards the end of summer, which will thoroughly ripen their just-matured stems. They should, however, be returned to the cool house before any danger from the fall of the external temperature is to be apprehended, and be placed in a gentle heat at the commencement of winter to start them into flower if they are required to bloom at that season; but if not wanted until the spring they are to be kept cool and dry all the winter.

They are propagated in different ways. Some of them form plants on the old stems, which should be cut off and potted. Some are propagated by cutting the old stems from the plants after they have done blooming, and laying them on the moist warm surface of a hotbed, or propagating pit, to induce them to break at the joints. Others, again, are increased by dividing the plants according to the directions given in the chapter devoted to remarks on Propagation.

D. ADUNCUM, Wallich.—A rather straggling growing evergreen species, producing its flower spikes from the old slender drooping stems, the short three- to five-flowered racemes being protruded through the scarious sheaths just above the joints; the small blossoms are white tinted with pink, and appear at different times in the year, lasting some two or three weeks in perfection; the leaves are linear-lanceolate acute; it succeeds best grown in a pot with peat and good drainage. This species is not so showy as many of the *Dendrobiums*, but it is well worth growing where there is room for it.—*India*.

FIG.—*Bot. Reg.*, 1846, t. 15; *Bot. Mag.*, t. 6784.

D. AGGREGATUM, Roxb.—A pretty dwarf evergreen species, growing about 4 inches high, with clustered one-leaved oblong-ovate furrowed pseudobulbs, the inflorescence consisting of a short loose raceme being produced from the axil of a small scale on the side of the pseudobulb; the flowers are deep golden-yellow with an orange-yellow stain at the base of the pubescent lip; *D. aggregatum majus* is a large-flowered variety. They flower in March and April, lasting two weeks in bloom, and will do either on a block or in a pot with peat. It is a desirable species.—*India*.

FIG.—*Bot. Reg.*, t. 1695; *Bot. Mag.*, t. 3643; *Paxton, Mag. Bot.*, vi, p. 145 with tab.; *Annales de Gand.*, 1849, t. 263; *Hook. First Cent. Orch. Pl.*, t. 8.

D. AINSWORTHII, Moore.—A beautiful and free-blooming hybrid, between *D. nobile* and *D. aureum* (*heterocarpum*); the stems resemble those of *D. nobile*, and the plant is quite as free a grower as that parent, blossoming from the mature stems; the leaves are linear-oblong; the flowers, which are produced



DENDROBIUM AINSWORTHII.
(From the *Gardeners' Chronicle*.)

from January to March, are deliciously scented, the sepals and petals pure white, the lip marked with a large central feathered blotch of rich bright amaranth or claret-purple. This plant was raised by Mr. Mitchell, when gardener to the late Dr. Ainsworth, of Manchester.—*Garden hybrid*.

FIG.—*Gard. Chron.*, N.S., i. p. 443, figs. 93, 94; *Id.*, viii. p. 166, figs. 30, 31, 32 (specimen plant); *Id.*, xvi. p. 625, f. 125; *Floral Mag.*, 2nd ser., t. 196; *Florist and Pom.*, 1874, p. 114, with figs.; *Lindley*, vii. t. 297; *Warner*, *Nel. Orch. Pl.*, iii. t. 30; *Veitch's Man. Orch. Pl.*, iii. p. 186.

D. AINSWORTHII ROSEUM, Moore.—A very handsome deeper coloured variety of the preceding, in which the sepals and petals are of a bright clear rosy magenta, and the lip amaranth crimson with a dark spot, feathered at the edge, and traversed by deeper crimson veins. It flowers in February and March, and was raised, we believe, in the same batch of seedlings as the foregoing.—*Garden hybrid*.

FIG.—*Orchid Album*, i. t. 20.

D. ALBO-SANGUINEUM, Lindley.—A distinct and compact-growing plant, with thick erect knobby stems a foot high, and thicker upwards. The leaves are

broad and firm, and the very large flowers grow in pairs from the joints near the top. The flowers have the sepals and petals creamy white, while the very large squarish flat lip is of the same colour, with a crimson blotch on each side near the base. It blooms in May and June, lasting a long time in perfection, and is a distinct Orchid, and a fine showy plant for exhibition. Mr. Lobb describes the wild plant as producing the flowers in racemes of five or six together. It thrives well on a block with sphagnum moss, or it will do well grown in baskets with sphagnum, and seems to be quite at home, for the bulbs become very strong. It requires plenty of water during the growing season, enjoys an abundance of light, and likes the warmest house.—*Mou'mein*.

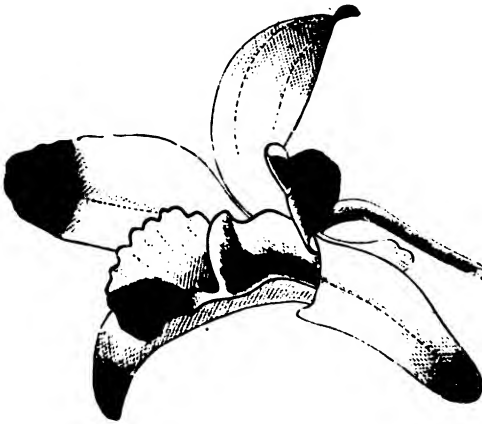
FIG.—*Parton, Fl. Gard.*, ii. t. 57; *Flore des Serres*, t. 721; *Lem. Jard. Fl.*, t. 203; *Bot. Mag.*, t. 5130; *Batem, Second Cent. Orch. Pl.*, t. 173.

D. ALBUM, *Wight*.—This distinct species was introduced by Messrs Loddiges as far back as 1842. The pseudobulbs are pendulous, from 1 to 2 feet long; the flowers are produced on the current year's growths in company with the foliage; sepals and petals nearly equal in size, all of a creamy white colour; lip three-lobed, white stained with yellow on the disk. Flowers in August and September.—*Neilgherry Hills, India*.

FIG.—*Wight, Icones*, t. 1645; *Parton's Fl. Gard.*, ii. p. 175; *Bot. Reg.*, t. 54; *Bot. Mag.*, t. 4640 (*D. aqueum*); *Orchid Album*, ix. t. 407.

SYN.—*D. aqueum*.

D. AMOENUM, *Wallich*.—A very pretty species, producing long slender fasciated pendulous stems 2 feet long, linear-lanceolate acuminate wavy



DENDROBIUM AMOENUM.

leaves, and short racemes, one- to three-flowered, from the nodes of the stem. The sepals and petals are pure white, tipped with magenta, the lip broadly ovate with a trumpet-shaped mouth, white, with the tip deep magenta-purple marked with three deeper coloured veins, and the concave base yellow with a velvety surface. The flowers are very fragrant. —*East Indies: Nepal and Sikkim, 5,000 feet elevation*.

FIG.—*Bot. Mag.*, t. 6199; *Knowles and Westc., Floral Cab.*, iii. t. 117; *Gard. Chron.*, N.S., iii. p. 305, figs. 57, 58; *Id.*, xvi. p. 625, f. 126.

D. ANOSMUM, *Lindley*.—A magnificent species, in the way of *D. superbum*, but not having the rhubarb scent which is characteristic of the flowers of that species; the sepals and petals, moreover, are broader, thus forming fuller and better-shaped flowers; the long thick pendent stems are like those of *D. superbum*, and the foliage and general aspect of the plant are similar; the flowers are large, and produced in pairs at the nodes, the colour being a

beautiful rosy lilac, with a large deep purple-crimson spot at the base of the lip. It blooms during the spring months, the blossoms lasting two or three weeks in perfection. Even now this is a scarce plant, and is best grown in a basket, as it is drooping and deciduous.—*Manilla*.

FIG.—*Parton, Mag. Bot.*, xv. p. 97, with tab.: *Lindenia*, vi. t. 264.

SYN.—*D. superbum anosmum*.

D. APHRODITE, *Rehb. f.*—A charming species, with slender branching stems, nearly a foot long, swollen at the joints, i.e., nodose. The leaves on the younger stems are oblong-obtuse, but these fall away before the flowers are developed; the latter are produced singly from the joints, $2\frac{1}{2}$ to 3 inches across, the smooth oblong-obtuse white sepals and petals spreading, the lip clawed, with a white callous disk on the claw, the sides inflexed, with a deep blood red spot at the base, and the front lobe large, sub-rhomboid acute, deep orange with a white margin and apex. It is a free and rapid grower, and very gay-looking when in blossom, but is a shy bloomer, flowering for several seasons upon its old growths. Blooms in spring.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5470; *Flore des Serres*, t. 1582.

SYN.—*D. nodatum*.

D. AQUEUM.—See DENDROBIUM ALBUM.

D. ARACHNITES, *Rehb. f.*—A very beautiful and distinct species, discovered by Mr. Boxall, when travelling for Messrs. Low & Co. It is of a dwarf habit of growth, and produces in profusion its very bright cinnabar-red flowers; the sepals and petals are broad, linear, equal in size; lip broader than the petals, sometimes ligulate, and other times with a very attenuate anterior part; flowers about 1 inch in diameter. We saw this plant well flowered in the collection of W. Lee, Esq., late of Leatherhead.—*Burmah*.

D. ASPASIA, *Hort.*—This handsome hybrid is a cross between *D. aureum* and *D. Wardianum*, and was raised both by Messrs. J. Veitch & Sons and C. Winn, Esq., of Birmingham. It is said to be a free grower and very floriferous. The following description is taken from the *Orchid Review*:—"The sepals and petals are creamy white, tipped with light rosy purple, which is most distinct on the petals; the lip has a very large orange disk, on which is an irregularly pencilled crimson blotch, in front of this is a cream-white area, and finally the apex is rose-purple."—*Garden hybrid*.

FIG.—*Orchid Review*, i. p. 137, f. 9.

SYN.—*D. Wardiano-aureum*.

D. ATRO-VIOLEACEUM, *Rolfe*.—A new and distinct species, introduced by Messrs. James Veitch & Sons from Eastern New Guinea. It belongs to the same group as *D. macrophyllum*. The pseudobulbs are clavate, tapering downwards, persistent, furrowed, having near the apex two or three stout leathery leaves; flower spike terminal, erect; sepals and petals fleshy in texture, creamy-white, regularly and densely spotted with deep purple; the lip is three-lobed, rich violet-purple within, green without. Flowers in spring.—*New Guinea*.

FIG.—*Orchid Album*, x. t. 444; *Journ. of Hort.*, 1894, xxviii. p. 65, f. 10; *Gard. Chron.*, 3rd ser., 1894, xv. p. 113, f. 12.

SYN.—*D. Forbesii*, *Ridley*.

D. AUREUM, *Lindley*.—This is a very distinct and desirable species, and one that should be grown by every one who is fond of sweet-scented flowers. It has terete-clavate pendent stems, which flower after the oblong acute leaves have fallen, producing two- or three-flowered racemes; the sepals and petals are cream-coloured or yellow (*D. rhombicum*), the lip with a velvety disk, golden yellow streaked and veined with crimson lines, recurved at the tip. These flowers, which are produced from October to March, and last several weeks in perfection, have a most delicious odour compared to that of violets, or of violets combined with primroses.—*India; Nepaul, Assam; Ceylon; Java.*

FIG.—*Bot. Mag.*, t. 4708; *Id.*, t. 4970 (var. *Henshallii*); *Bot. Reg.*, 1839, t. 20 (var. *pallidum*); *Id.*, 1843, t. 17 (*rhombicum*); *Flore des Serres*, t. 842; *Lem. Jard. Fl.*, t. 386; *Wall. Pl. As. Har.*, t. 196; *Wight, Icon. Pl. Ind. Or.*, v. t. 1646; *Bateman, Second Cent. Orch. Pl.*, t. 150; *Reichenbachia*, ii. t. 63; *Veitch's Man. Orch. Pl.*, iii. p. 20.

SYN.—*D. heterocarpum*; *D. rhombum*.

D. AUREUM PHILIPPINENSE, *Rehb. f.*—A gigantic variety of the preceding, having pseudobulbs $1\frac{1}{2}$ to 2 feet long. The flowers are paler than those of the type, and have a single broad purple patch under the velvety disk; they are also produced in much greater profusion. This variety is not sweet-scented like the type.—*Philippine Islands.*

D. BARBATULO-CHLOROPS, *Rolfe*.—This supposed natural hybrid between *D. barbatulum* and *D. chlorops* has been described by Mr. Rolfe as follows:—"A form has now appeared in the collection of Major-General E. S. Berkeley, of Spetchley, Bitterne Park, Southampton, which so neatly combines the characters of the two species, that I have no doubt it is a natural hybrid between them. The flower is white, and has the shape of *D. barbatulum*, yet all the segments and mentum are shorter than in the species, and the latter organ more blunt, as in *D. chlorops*; the side lobes of the lip are also wholly light green, and the crest broader, as in the same species, but the tuft of hairs closely resembles *D. barbatulum*. Briefly it may be described as *D. barbatulum*, a little modified in shape, with the crest and the side lobes of the lip of *D. chlorops*. Good specimens of both the parent species from the same collection enable these characters to be easily traced. Its appearance is very interesting, as *D. crassinodi-Wardianum* is the only other undoubted natural hybrid known in the genus" (*Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 298).—*India.*

D. BARBATULUM, *Lindley*.—A charming epiphyte, well adapted for cutting, growing 1 foot or more in height, and having stiff curved sub-erect stems, terete from a swollen base, the joints covered with membranaceous sheaths. The leaves, which are only seen on the young shoots, are lanceolate acuminate. The flowers grow in lateral racemes on slender almost filiform slightly curved peduncles, and are numerous, crowded, secund, with elliptic sepals, lanceolate petals, and an obovate spatulate lip, pure white in every part except the greenish spur. These crowded clusters of white flowers are very effective. It is known from *D. Fytchianum*, with which it is confounded in the *Bot. Mag.* plates, by the orbicular petals of the latter plant, and its terminal racemes. Not being a robust grower, it succeeds best on a block, and must have a tolerable rest after its growth is made.—*Western Peninsula of India: Concan.*

FIG.—*Bot. Mag.*, t. 5918; *Parton, Fl. Gard.*, iii. p. 113, f. 285. The *B. M.* plate 5444, labelled *barbatulum*, is *Fytchianum*.

D. "BENITA," *O'Brien*.—This hybrid was raised by W. E. Brymer, Esq., of Dorchester, and is described by Mr. J. O'Brien as follows:—"The flowers, which are borne in pairs, are $3\frac{1}{2}$ inches across; the sepals white, tinged with pale lilac hue on both surfaces; the petals white, tinged with amethystine purple on the outer half; the labellum is white, with radiating lines of purple at the base, which expand into a rich purplish blotch, which fills the larger proportion of the area of the lip; the purple blotch has a pale primrose band in front, and the tip of the labellum is coloured like the tips of the petals. Of the growth of the plants, Mr. John Powell, the gardener at Ilslington, gives the following particulars:—"The plants vary in their habit of growth. The two which have flowered partake most of *D. aureum* (*heterocarpum*), although the pseudobulbs are more thickened at the nodes than are those of that species or *D. nobile*. There is one very distinct plant in the batch, having a more branching habit, and thinner linear leaves.' It is a very handsome *Dendrobium*, and it bears the name *D. Benita* at Mr. Brymer's request, in compliment to his niece" (*Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 355).—(*Garden hybrid*).

D. BENSONIAE, *Rchb. f.*—A lovely species, bearing some resemblance in its habit to *D. crystallinum*. It has sub-erect or pendulous terete stems 1 to 3 feet long, the younger ones with linear-acute or emarginate leaves, the older leafless ones bearing the large showy flowers two or three together from the nodes; the sepals oblong-lanceolate, the petals roundish oblong, both creamy-white, the orbicular concave tomentose lip orange, with two large black-purplish spots at the base. A handsome and desirable species.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5679; *Floral Mag.*, t. 355; *Jennings, Orch.*, t. 32; *Gard. Chron.*, N.S., xxii. p. 145, f. 30; *Lindley, iv.* t. 148; *Veitch's Man. Orch. Pl.*, iii. p. 22.

D. BENSONIAE XANTHINUM, *Rchb. f.*—A very chaste variety of the preceding species; sepals and petals pure white; lip white with an orange disk. This variety is quite destitute of the two dark blotches found at the base of the lip in the typical form.—*Moulmein*.

D. BIGIBBUM, *Lindley*.—A very handsome species, of a distinct type, represented by *D. superbiens*, *Goldiei*, and *Phalaenopsis*, and certainly one of the handsomest of the Australian kinds. It is a dwarfish-growing plant, producing slender fusiform stems about a span long, the younger ones having a few linear-oblong leaves near the summit, whence also spring the peduncles, bearing racemes of rich rosy-purple very broad-petalled flowers; they will sometimes continue to throw out these racemes from the same stem for several successive years; it will thrive in the East Indian house, potted in fibrous peat and sphagnum moss, giving abundance of drainage, and a plentiful supply of water in the growing season; if allowed to become dry enough to shrivel, it will with great difficulty be restored. This species delights in an abundance of light. We have found it do well in a stove where no shading is used; in fact we have grown it far better in this way than even in the East Indian house. It flowers in October, November, and December.—*North Australia*.

FIG.—*Bot. Mag.*, t. 4898; *Warner, Sel. Orch. Pl.*, ii. t. 8; *Parton, Fl. Gard.*, iii. p. 25, f. 245; *Flore des Serres*, t. 1143; *Floral Mag.*, 2nd ser., t. 386; *Orchid Album*, i. t. 38; *Batcm. Second Cent. Orch. Pl.*, t. 169; *L. Illust. Hort.*, 1883, xxx. t. 476; *L. Orchidophile*, 1891, p. 208; *Veitch's Man. Orch. Pl.*, iii. p. 23; *Gardening World*, vi. p. 73.

D. BIGIBBUM ALBO-MARGINATUM, *Lind.*—A beautiful variety, in which the segments of the flowers are bordered with white, which gives them a very elegant appearance.

FIG.—*Lindenia*, vii. t. 317.

D. BIGIBBUM CANDIDUM, *Rehb. f.*—This is a very chaste and distinct variety of the type, having white flowers slightly tinged with rosy-purple; it was introduced by us from *Torres Straits*.

D. BIGIBBUM SUPERBUM, *Rehb. f.*—A superior and much bolder form than the type; the flowers are larger in all their parts, the side lobes of the lip are almost blackish-purple and the spur is longer.—*North Australia*.

FIG.—*Floral Mag.*, 2nd ser., t. 229.

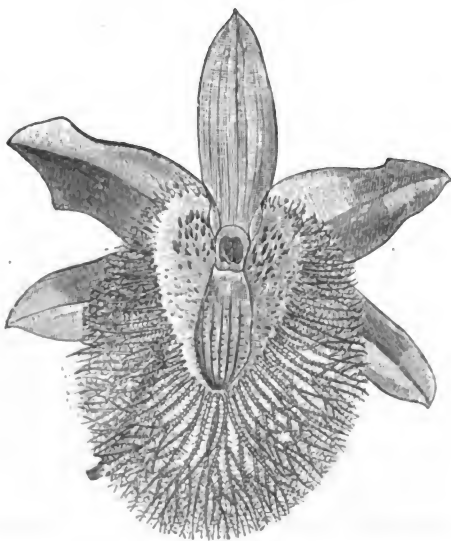
D. BOXALLII, *Rehb. f.*—A very beautiful species. It has moderately stout stems, thickened on one side below the nodes, linear-ligulate or dentate leaves, and short clusters of flowers from the defoliated stems; the sepals and petals are white, beautifully tipped with crimson-purple, and the lip, which is white and similarly tipped, has in addition a large deep orange-coloured disk.—*Moulmein*.

FIG.—*Xenia Orch.*, ii. t. 194; *Floral Mag.*, 2nd ser., t. 114; *Jennings, Orch.*, t. 19.

D. BRACTEOSUM, *Rehb. f.*—A pretty species with pendulous pseudobulbs, which produce short tufted bunches of small flowers of a delicate rose colour, with a yellow lip.—*New Guinea*.

DENDROBIUM BRYMERIANUM.

FIG.—*Lindenia*, ii. t. 74.



D. BRYMERIANUM, *Rehb. f.*—

This very handsome species was first flowered by and named in honour of W. E. Brymer, Esq., Ilington House, Dorchester. It has terete stems a foot high or more, slightly swollen in the middle part, with lanceolate acuminate distichous leaves, and short lateral racemes produced near the top of the stem; the flowers are 3 inches in diameter, sweet scented, golden-yellow, with ovate-lanceolate sepals, linear-oblong petals, and a triangular cordate lip, the middle lobe of which is greenish-yellow beautifully fringed with a long beard-like appendage of dichotomously-branched flexuose ciliolate

processes, and the short broad lateral lobes are deep orange with a shorter fringe. Flowers in spring.—*Burmah*.

FIG.—*Bot. Mag.*, t. 6383; *Floral Mag.*, 2nd ser., t. 459; *Gard. Chron.*, N.S., xi. p. 474, f. 65; *Id.*, xvi., p. 688, f. 140; *Veitch's Man. Orch. Pl.*, iii. p. 25; *Orchid Album*, ix. t. 398; *Lindenia*, iv. t. 183; *Reichenbachia*, ii. t. 92.

D. BRYMERIANUM HISTRIONICUM, *Rehb. f.*—A variety with shorter bulbs, which flowers in the autumn months, and which is much inferior to the type; moreover the flowers very seldom expand as they are often self-fertilised before they burst open.

D. BULLERIANUM.—See *D. GRATIOSISSIMUM*.

D. BURFORDIENSE, *Hort. Lawrence*.—This pretty hybrid is the result of a cross between *D. Linawianum* and *D. aureum*. It is very free-flowering; pseudobulbs slender, fusiform, bearing ovate-lanceolate distichous leaves; growth intermediate between the two parents, but there is no indication of any nodes; sepals and petals are rosy-purple, white towards the base; lip white, tipped with rosy-purple; throat deep reddish purple. Flowers in January.—*Garden hybrid*.

D. CALAMIFORME.—See *D. TERETIFOLIUM*.

D. CALCEOLARIA.—See *D. MOSCHATUM*.

D. CALCEOLUS.—See *D. MOSCHATUM CUPREUM*.

D. CAMBRIDGEANUM.—See *D. OCHREATUM*.

D. CANALICULATUM, *R. Br.*—A pretty Orchid of easy culture, and bearing sweet-scented flowers. It has short pear-shaped stems resembling pseudobulbs; these bear a few narrow acute fleshy leaves, and from the side of the stem near the apex a peduncle or scape, which is slender, rigid, erect, about a foot high, terminating in a raceme of a dozen or more curious but not showy flowers, the narrow sepals and petals of which are white tipped with yellow, and the wedge-shaped lip deep mauve on its disk, white at the margins, and bearing along the centre three keel-like elevated veins, which terminate on the semi-ovate apiculate front lobe in crenulated plates. It is a very singular and desirable small-flowered species.—*North-east Australia*.

FIG.—*Bot. Mag.* t. 5537.

SYN.—*D. Tuttonianum*.

D. CAPILLIPES, *Rehb. f.*—This is a curious dwarf-growing species, resembling a pigmy form of *D. albo-sanguineum*. It usually attains a height of about 6 inches, producing short racemes of bright golden yellow flowers. Succeeds best upon a block or in a basket. Blooms in March.—*Moulmein*.

FIG.—*Xenia Orch.*, ii. t. 169, figs. 4-6.

D. CASSIOPE, *Rolfe*.—A pretty little hybrid, raised by N. C. Cookson, Esq., of Wylam-on-Tyne, between *D. japonicum* fertilised with the pollen of *D. nobile album*. The flowers very much resemble those of *D. endocharis* and are about 2 inches in diameter, pure white with a maroon-purple throat. Flowers during spring and summer months.—*Garden hybrid*.

FIG.—*Reichenbachia*, 2nd ser., ii. t. 50; *L'Orchidophile*, 1893, p. 106 (woodcut).

D. CHLOROPS, *Lindley*.—A very pretty free-flowering species, producing pale nankin flowers, having the base of the lip of a bright pea-green. The flowers last a considerable time in bloom.—*India: Western Peninsula*.

D. CHLOROSTELE, *Rehb. f.*—This is another of Sir Trevor Lawrence's hybrids, between *D. Linarcianum* and *D. Wardianum*. The growth resembles that of the first-named parent. "The substance of the flower is very bold and stiff. Sepals ligulate, acute, white with purple edges; petals broad, blunt, with outer halves purple, interior white; lip of the shape that is so conspicuous in *D. Wardianum*, with a strong light square cushion at the base, and an amaranth-coloured radiating area around bordered outside with light sulphur colour, the apicular one being light purple" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 477).—*Garden hybrid*.

D. CHLOROSTELE OWENIANUM.—See *D. OWENIANUM*.

D. CHRYSANTHUM, *Wallich*.—A handsome Orchid, having pendulous deciduous stems, 3 to 4 feet long, furnished with twisted ovate-lanceolate acuminate leaves, and generally producing flowers along the stem at the time of making its growth; they are produced at different times of the year, and grow in pairs or threes, continuing in perfection for ten days or a fortnight. The flowers are of an intense deep yellow, fleshy with oblong sepals and obovate petals, and a cucullate denticulate lip of the same colour marked in the centre with a large double spot of intense blood-purple. The plants grow best in baskets suspended from the roof of the house. Flowers in winter. The *D. Paxtoni* of gardens, and of Paxton, is *D. fimbriatum oculatum*.—*Nepaul*.

FIG.—*Bot. Reg.*, t. 1299; *Gartenflora*, t. 446; *Lindenia*, v. t. 194.

SYN.—*D. Paxtoni*, Lindl., not of Paxton.

D. CHRYSODISCUS, *Rehb. f.*—This beautiful hybrid was raised by Sir Trevor Lawrence, Bart., between *D. Findlayanum* and *D. Ainsworthii*; the bulbs are intermediate between the two parents. "The sepals are ligulate acute, whitish with purple apicular parts; the petals are broad, white, purple at the apex; the lip is of the lightest sulphur-white with a velvety white thickened cushion at the base; a large orange area around, purple lines radiate from the cushion, and the apex is purple too." Flowers in January and February.—*Garden hybrid*.

D. CHRYSOTIS, *Rehb. f.*—This plant very much resembles *D. fimbriatum oculatum* in the colour of its flowers. It grows from 3 to 4 feet high, with slender rod-like stems, dark green oblong-lanceolate acuminate leaves, and long drooping axillary racemes, bearing six to nine large flowers, which measure 3 to 4 inches across; the sepals and petals are oblong-acute, entire, of a rich deep yellow; the lip is large, orbicular-cordate, velvety, of the same colour as the petals, or of a deeper apricot yellow, having two blotches of purplish-black towards the base, and deeply fringed with bearded segments at the margins.—*Assam*.

FIG.—*Florist and Pom.*, 1871, p. 145, with tab.; *Bot. Mag.*, t. 6013; *Warner, Sel. Orch. Pl.*, iii. t. 6; *L'ill. Hort.*, 3rd ser., t. 155 (poor); *Orchid Album*, ix. t. 419; *Journ. of Hort.*, 1893, xxvii. p. 49, f. 8 (*D. Hookerianum*).

SYN.—*D. Hookerianum*, *Bot. Mag.* (non Lindl., which is described as having fascicle 1 not racemose flowers).

D. CHRYSOTOXUM, *Lindley*.—This is a showy species, an upright-growing evergreen plant, with fleshy ribbed clavate stems a foot or more in height, and bearing three or four largish oblong-acute, leathery dark green leaves, clustered

at the top. The racemes of flowers are lateral, also from the upper end of the stem, drooping, consisting of a dozen or more showy flowers, which are golden yellow, the lip cucullate and roundish, beautifully fringed and ciliated, pubescent, rich orange, with a paler margin; there is an arch of very deep orange at the base of the flower. It blooms during the winter and spring months, and lasts two or three weeks in perfection. Of this there are two varieties, one much superior to the other. Pot culture in peat suits it best. Blooms in February.—*Moulmein*.

FIG.—*Bot. Reg.*, 1847, t. 36; *Bot. Mag.*, t. 5053; *L'Ill. Hort.*, t. 164; *Batem. Second Cent. Orch. Pl.*, t. 124.

D. CILIATUM, *Parish*.—An interesting species introduced about thirty years since, by the Rev. C. Parish; the pseudobulbs are tufted, a few inches to 1 foot or 18 inches long; racemes about as long as the bulbs, six- to eighteen-flowered; individual flowers about 1 inch across; sepals and petals equal in size, greenish-yellow, lip deep yellow streaked with reddish-brown, the edges being ornamented with a row of hairs. Blooms in summer.—*Moulmein*.

FIG.—*Bot. Mag.* t. 5430; *Orchid Album*, x. t. 454.

D. CLAVATUM, *Wallich*.—A remarkably handsome evergreen species, which has terete pendulous stems 2 feet long, and produces five-flowered lateral scaly racemes of flowers from the top of the stems; their colour is a bright orange yellow, with a broad double brownish-crimson spot in the centre of the lip, which is pubescent on the surface, and ciliated, not fringed, at the edge. This is one of the finest of the yellow kinds, and it continues in perfection three weeks, thus making a fine exhibition plant. Pot culture in peat suits it best.—*Assam*.

FIG.—*Paxton, Fl. Gard.*, ii. p. 104, f. 189; *Revue Hort. Belge.*, 1885, p. 181; *Bot. Mag.*, t. 6993.

D. COERULESCENS.—See *D. NOBILE*.

D. CRASSINODE, *Benson et Rehb. f.*—A very handsome and distinct species, with stout stems varying from 6 to 18 inches in length, and having large close-set swollen or knotted joints or nodes, forming depressed spheres 1 inch in diameter, whence the name *crassinode*; the flowers, which grow on the older defoliated stems, are abundant from the upper nodes, $2\frac{1}{2}$ inches in diameter, solitary or in pairs, the linear-oblong sepals and petals waxy white tipped with magenta-purple, and the broadly oblong-ovate obtuse velvety lip white with an orange-yellow blotch at the base, and a magenta-purple tip. The plant is best grown in a small basket or on a block, with sphagnum moss. Flowers produced in January and February.—*Siam: Arracan Mountains*, elevation 2,500 feet.

FIG.—*Bot. Mag.*, t. 5766; *Orchid Album*, iv. t. 152; *Veitch's Man. Orch. Pl.*, iii. p. 31.

D. CRASSINODE ALBIFLORUM, *Rehb. f.*—This is a pure white variety of the species, with a lemon-coloured blotch at the base of the lip. It was first flowered in the collection of Messrs. Low, of Upper Clapton, and has subsequently been exhibited by Sir Trevor Lawrence, Bart. It is called *D. crassinode album* in some collections.—*Moulmein*.

FIG.—*Orchid Album*, x. t. 458.

D. CRASSINODE BARBERIANUM, *Rehb. f.*—This is a great improvement on the original form of the species. The stems are stouter, and the plants grow much stronger than those of *D. crassinode*; the flowers are of greater substance and more highly coloured; the sepals and petals are pure white tipped with rich magenta, the lip white tipped with the same colour, the throat and disk orange. This variety lasts a long time in perfection.—*Moulmein*.

D. CRASSINODI-WARDIANUM.—*See D. MELANOPHTHALMUM*.

D. CREPIDATUM, *Lindley*.—A splendid deciduous drooping species, with terete striate stems a foot or more in length, oblong acute leaves, and flowers in pairs from the joints of the leafless stems; the oblong sepals and broader petals are white, tipped with pink; and the roundish cordiform pubescent lip is stained with yellow in the basal half, white edged with pink in front, the base of the lip being curiously folded in on each side. It blooms in March, April, and May, and continues three weeks in perfection. This species will make a good plant for exhibition, as it may be easily retarded by keeping it cool in winter. It is best grown in a basket or on a block.—*India: Assam*.

FIG.—*Parson, Fl. Gard.*, i. p. 63, f. 45; *Bot. Mag.*, t. 4983; *Id.*, t. 5011 (smooth-lipped var.); *Batem. Second Cent. Orch. Pl.*, t. 129.

D. CRETACEUM, *Lindley*.—A compact-growing deciduous plant, with pendent curved terete striated stems a foot long or more, producing its solitary flowers from the joints of the leafless stems during June and July, and lasting six weeks in perfection. The flowers are opaque dull white, the sepals and petals lanceolate, the lip roundish, cucullate, pubescent, and finbriate, pale yellow in the centre, marked with a few crimson lines, white at the edge. The leaves borne on the young shoots are lanceolate, obliquely emarginate at the tip. This will do either in a pot or basket, with peat or moss.—*India: Assam, Khasya, Mergui*.

FIG.—*Bot. Reg.*, 1847, t. 62; *Bot. Mag.*, t. 4636; *Lem. Jard. Fl.*, t. 344; *Flore des Serres*, t. 818.

D. CRUENTUM, *Rehb. f.* A very distinct and beautiful species belonging to the nigro-hirsute section, which we first saw in the collection of R. H. Measures, Esq., Streatham. The stems resemble those of *D. Jamesianum*, the membrane sheathing the internodes being covered with small hairs as in that species. The flowers grow in pairs from the nodes on the ripened leafless stems. The sepals and petals are yellowish-green, reticulated with a darker green; and the lip is yellowish-green, margined distinctly with bright crimson-scarlet, and having the crests and side laciniae of the lip of the same colour. It flowers during the autumn months.—*Malayan Peninsula*.

FIG.—*Orchid Album*, iv. t. 174.

D. CRUMENATUM, *Swartz*.—A very old species, distributed largely over tropical Asia and the Malay Archipelago. It first flowered at Syon House, the residence of the Duke of Northumberland, in 1857. The flower spikes issue from the apex of the bulbs; sepals and petals equal in size, pure white; lip also pure white. Flowers in spring.—*Malay Archipelago; Tropical Asia*.

FIG.—*Bot. Reg.*, xxv. t. 22; *Bot. Mag.*, t. 4013; *Lindenia*, v. t. 207

D. CRYSTALLINUM, *Rehb. f.*—A distinct and beautiful species, with terete somewhat slender striate pendulous stems, which are destitute of the knotted joints so conspicuous in some of the allied plants. The distichous linear-lanceolate acuminate leaves are produced on the young stems, and fall away before the flowers are developed. The flowers are of moderate size, and freely produced; the sepals and petals white tipped with magenta; the lip orange at the base and slightly tipped with magenta. It is a most desirable plant, flowering during the spring and summer months.—*Burmah*.

FIG.—*Bot. Mag.*, t. 6319; *Xenia Orch.*, ii. t. 193; *Orchid Album*, x. t. 441.

D. CUPREUM.—See *D. MOSCHATUM CUPREUM*.

D. CYBELE, *Rolfe*.—This hybrid was raised in the nurseries of Messrs. J. Veitch & Sons, and is the result of a cross between *D. Findlayanum* and *D. nobile*. The growth most resembles that of *D. nobile*. The flowers also much resemble that species; the sepals and petals are white, tipped with light rose; lip yellowish-white having a large blotch of deep crimson-purple at the base.—*Garden hybrid*.

D. D'ALBERTISII, *Rehb. f.*—A very pretty and distinct species introduced by us from New Guinea. It is rather dwarf in habit, and has the peculiarity of producing square tapering stems. The flowers are produced in erect racemes, and are distinctly spurred; the sepals are pure white, and the lip striped with magenta-purple, forming a pleasing contrast to the long narrow erect twisted emerald green petals, which have been compared to the horns of an antelope. It has an odour like that of *D. amoenum*.—*New Guinea*.

FIG.—*Gard. Chron.*, N.S., x. p. 217, f. 41 (flower).



DENDROBIUM D'ALBERTISII.

(From the *Gardeners' Chronicle*.)

D. DALHOUSIEANUM, *Wallich*.—This is a beautiful large-flowered evergreen species, with stoutish terete sub-fusiform stems from 4 to 8 feet high, elegantly marked with reddish-crimson; it blooms from the old growths in March, April, and May, producing drooping lateral racemes of from five to seven flowers: these flowers are large, fully 3 inches across, with the parts broad and strikingly effective; the ovate sepals and much larger petals are of a tawny-yellow colour edged with rose; the lip is oblong, constricted in the middle, glandularly villous and incurved in front, where it is whitish, the base pale yellowish, marked on each side with a large oblong purple-crimson blotch, the inner edge of which passes into coloured whisker-like fringes; it lasts four or five days in beauty. This will grow either in a pot or basket, with moss. *D. Dalhousieanum* has been exhibited with forty-three flower spikes and four hundred and forty flowers, each 4½ inches in diameter.—*India*.

FIG.—*Paxton, Mag. Bot.*, xi. p. 145, with tab.; *Bot. Reg.*, 1846, t. 10; *Flore des Serres*, t. 698; *L'III. Hort.*, 3rd ser., t. 423; *Warner, Sel. Orch. Pl.*, i. t. 22; *Griffith, Icon. Pl. Asiat.*, t. 5-7; *Lindley's*, vi. t. 251; *Veitch's Man. Orch. Pl.*, iii. p. 36.

D. DALHOUSIEANUM LUTEUM, *O'Brien*.—This distinct variety was imported by Major-General E. S. Berkeley, and the stock of it was acquired by us from him. The flowers are clear straw-yellow in colour, and the lip is furnished with two bright mauve-purple blotches as in the type; it is also thicker in the substance of the sepals and petals.—*India*.

D. DEAREI, *Rchb. f.*—This handsome and desirable species is one of the best white-flowered *Dendrobies* in cultivation. It has stoutish terete stems 2 to 3 feet high, bearing at the top a few close-set oblong-ligulate emarginate leaves, and produces both terminal and lateral flower racemes both from the old and new stems in the same way as *D. superbiens*; the flowers, which last several weeks in perfection, are nearly 3 inches across, and produced in bold racemes of from ten to fifteen together; they are pure white, having a slight tinge of green in the throat. We saw a plant of this recently in Sir Trevor Lawrence's collection with three spikes on one bulb, and the effect of the butterfly-like flowers produced in such quantities was most charming. This plant is well grown by Mr. Whillans, gardener to the Duke of Marlboro', Blenheim.—*Philippine Islands: Mindanao*.

FIG.—*Orchid Album*, iii. t. 120; *Vitch's Man. Orch. Pl.*, iii. p. 37.

D. DENSIFLORUM, *Wallich*.—A magnificent compact-growing free-flowering evergreen Orchid. The stems are clavate, pendulous, leafy at the apex, a foot or more high, the leaves oblong acute nervose, and the racemes lateral, pendent from the upper joints of the stem, many-flowered. It blooms in March, April, or May, and lasts from four to six days in perfection if kept in a cool house; the ovate spreading sepals and petals are rich bright yellow, and the broad rhomboid serrulate retuse lip is of a deep orange colour. This is one of the showiest Orchids in cultivation, and one of the choicest plants we have for exhibition on account of its colour. It should be potted in peat. We have seen this species bearing nearly one hundred flower spikes at one time.—*India: Nepal*

FIG.—*Bot. Reg.*, t. 1828; *Flora des Serres*, t. 1397; *Parton, Mag. Bot.*, v. p. 121, with tab.; *Wall. Pl. As. Rar.*, t. 40; *Hook. First Cent. Orch. Pl.*, t. 9; *Bot. Mag.*, t. 2418; *Lindenia*, iv. t. 187; *Orchid Album*, vii. t. 303; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 123, f. 30.

D. DENSIFLORUM ALBO-LUTEUM.—See *D. THYSIFLORUM*.

D. DENSIFLORUM SCHRÖDERI.—See *D. SCHRÖDERI*.

D. DENSIFLORUM WALKERIANUM.—See *D. THYSIFLORUM WALKERIANUM*.

D. DEVONIANUM, *Paxt.*—This is one of the most delicate and lovely species of the genus. The stems are pendulous, slender, elongate, terete, proliferous, with a few linear-lanceolate leaves, which fall away before the flowers are developed; the flowers are produced from the nodes, for fully three parts of the entire length of the stems, which sometimes attain the extent of 4 feet, they are 2 inches across; the sepals cream-coloured, faintly shaded with pinkish-purple; the petals broader than the sepals, beautifully ciliated, yellowish with a deep magenta-purple tip, and the lip broadly heart-shaped, cucullate, white with a spot of rich orange on each side of the disk, the emarginate apex with a well-defined blotch of purple;



DENDROBIUM DENSIFLORUM.
(From the *Gardener's Chronicle*.)

the entire margin is most beautifully plumoso-fimbriate. It blooms from March to June, and lasts two weeks in perfection. This plant is best grown in a basket with moss. It is usually found difficult to cultivate, but the great secret is to give it plenty of water when growing, and always to bear in mind that the red spider is its desperate enemy, often attacking the leaves; this must be diligently searched for, and, if found, kept under by syringing the foliage every day, or even twice a day in summer. It makes a splendid plant for exhibition.—*India: Khasya Hills.*

FIG.—*Parton, Mag. Bot.*, vii. p. 169, with tab.; *Bot. Mag.*, t. 4429; *Flore des Serres*, t. 647; *Belg. Hort.*, iii., p. 204, with tab.; *L'Ill. Hort.*, t. 145; *Lem. Jard. Fl.*, t. 11; *Warner, Sel. Orch. Pl.*, ii. t. 11; *Lindenia*, vi. t. 247; *Vitch's Man. Orch. Pl.*, iii. p. 38; *Gard. Chron.*, 3rd ser., 1890, vii. May 31 (supplement); *Orchid Album*, xi. t. 488.

D. DEVONIANUM CANDIDULUM, *Rehb. f.*—A very distinct and chaste variety having the sepals and petals white, and not tipped with magenta as in the type; the lip is white with an orange blotch in the centre. It blooms in March, April, and May.—*India.*

D. DEVONIANUM RHODONEURUM, *Rehb. f.*—In this variety the sepals and petals are streaked with dark purple, and the lip is large and round; the flowers are remarkably sweet. It is very distinct, and is said to last longer in flower than the normal form.—*India.*

D. DIXANTHUM, *Rehb. f.*—A very pretty species with somewhat terete stems, slender at their base, and attaining a foot and a half in length. It is a very free grower and abundant flowerer, producing its brightly coloured flowers, which are of two shades of yellow, in spring; the flowers are produced in lateral racemes of from two to five, from the older leafless stems; the sepals lanceolate, the petals oblong, both clear pale yellow, and the broadish sub-quadrate minutely denticulate lip also pale yellow, with a deeper yellow blotch in the centre.—*Moulmein.*

FIG.—*Bot. Mag.*, t. 5564.

D. DOMINIANUM, *Rehb. f.*—A hybrid *Dendrobe* of ornamental character, raised by the late Mr. Dominy. It is a cross between *D. Linavianum* and *D. nobile*, and bears rosy-purple flowers intermediate between the two, the lip with a dark basal blotch, a band of white, and tipped with rosy-purple.—*Garden hybrid.*

D. DRACONIS, *Rehb. f.*—A very distinct and beautiful species, having waxy white flowers. It is evergreen, and has moderately short fusiform stems about a foot in height, and covered with deciduous dark hairs; the leaves are coriaceous, lanceolate, obliquely obtuse; and the flowers are produced in lateral or terminal racemes; the lanceolate acute sepals and petals are pure ivory white; the lip is white, with bright Roman red or vermilion markings on the throat. It blossoms in May, June, and July, and lasts six weeks in perfection.—*Moulmein, Burmah; Cochin China.*

FIG.—*Xenia Orch.*, ii. t. 146; *Bot. Mag.*, t. 5459; *Batem. Second Cat. Orch. Pl.*, t. 166; *Revue Hort.*, 1833, p. 132, with tab.; *Orchid Album*, iii. t. 103.

SYN.—*D. eburneum*.

D. EBURNEUM.—See *D. DRACONIS*.

D. ENDOCHARIS, *Rehb. f.*—An ornamental hybrid, raised by Mr. Seden. The stems very much resemble those of *D. aureum* (*heterocarpum*), and bear the flowers in pairs; these are nearly as large as those of that species, but with broader white petals; the lip is nearly that of *D. moniliforme*, with projecting basilar lobes.—*Garden hybrid*.

FIG.—*Veitch's Man. Orch. Pl.*, iii. p. 88.

D. ERYTHROPOGON, *Rehb. f.*—This plant was imported with *D. Lowii*, and resembles that species in growth. The sepals are of a pallid whitish ochre, partly ochre-coloured, and are deficient of the fine yellow of the typical *D. Lowii*; the lip has seven thick crimson keels on the disk of the middle lobe, the two external ones having short crimson hairs on each side, and there is a crimson wash between the keels.—*Borneo*.

D. ERYTHROXANTHUM, *Rehb. f.*—A very pretty species, which in habit of growth resembles *D. secundum*. The racemose flowers form a dense mass, and are of a bright amber, striped with purple-crimson. It blooms in August, the flowers being produced in clusters of two to three dozen together.—*Philippine Islands*.

D. EUOSMUM, *Rehb. f.*—This is a hybrid between *D. endocharis* and *D. nobile*, and was raised by Mr. Seden in the nurseries of Messrs. J. Veitch & Sons. It, as well as the two varieties, are thus described in their manual of Orchidaceous Plants: "Flowers fragrant, as large as those of *D. nobile*; sepals and petals white, tipped with pale rosy-purple, as is also the lip, the disk of which is maroon-purple, surrounded by white." Reichenbach, in his original description, states that the flower is cream-coloured.—*Garden hybrid*.

In the variety *leucopterum*, "the sepals, petals, and lip are pure white, except the disk of the latter, which is Indian purple, paler than in the type." The variety *roseum* "has the sepals and petals toned with rose-purple, which is of a much deeper shade at the apex; the apical blotch on the lip deeper than in the type."

D. FALCONERI, *Hook.*—A magnificent plant of pendulous growth, and one of the most beautiful of the genus. The stems are long, slender, branched, and knotted, with few small linear leaves, terminal on the young shoots; the flowers are $4\frac{1}{2}$ inches across, produced singly all along the older leafless stems; the sepals oblong-lanceolate, the petals ovate-acuminate, the lip cucullate with the front portion ovate-acute, all white, or bluish white freely tipped with rich deep purple, the lip having in addition a broad orange-coloured disk, which is marked by a large central dark purple spot. It is now plentiful, so that growers will have a better chance of finding the best way to cultivate it by placing it under different treatment and in different houses. During the growing season it likes a good supply of water; but after it has finished growth, which is by autumn, it should be kept rather dry till it begins to show flower, but must never be allowed to suffer for want of water, as it frequently grows during the winter months. Under this treatment it flowers every year, well repaying any trouble that is taken to induce it to produce its charming white purple-tipped flowers, which open in May and June, and remain about ten days in perfection. The blunt-petalled

variety is called *Jacksoni* by Morren.—*Northern India: Assam, Bhotan*, elevation 4,000 feet.

FIG.—*Bot. Mag.*, t. 4944; *Id.*, t. 5058 (blunt-petalled var.): *Flore des Serres*, t. 1197; *Belg. Hort.*, 1874, t. 15 (blunt-petalled var.): *Floral Mag.*, 2nd ser., t. 226; *Lindenius*, i. t. 4; *Bateman, Second Cent. Orch. Pl.*, t. 137; *Journ. of Hort.*, 1889, xix. p. 395, f. 46.

D. FALCONERI ALBIDULUM, *Rchb. f.*—This variety has pure white flowers, slightly tinged with purple at the tips of the sepals and petals, the apex of the lip having also a slight tinge of purple. It was flowered by H. G. Elliott, Esq. Clapton.—*Northern India*.

D. FALCONERI GIGANTEUM, *Hort.*—A very superior variety of *D. Falconeri*, producing stronger stems than those of the type form, and more after the style of those of the original Assam variety of *D. Wardianum*; the flowers are larger and of greater substance, otherwise they resemble those of the type.—*Northern India*.

FIG.—*Orchid Album*, vi. t. 257.

D. FARMERI, *Paxt.*—A compact-growing evergreen species with delicately beautiful blossoms, and the habit of *D. densiflorum*. The stems are clavate from a small knob-like base, and deeply furrowed so as to become quadrangular; at the top of the stem are from two to four ovate leathery leaves, and later on the loose drooping racemes of numerous flowers; these have the ovate obtuse sepals and the larger petals yellowish-white flushed with pink, and the lip is straw-coloured and pubescent, rich yellow in the centre and denticulate at the margin. It blooms in April and May, and lasts two weeks in beauty if kept in a cool house. This species requires the same treatment as *D. densiflorum*. There are many forms of this plant, which varies much in colour and in the manner of its growth.—*India*.

FIG.—*Paxton, Mag. Bot.*, xv. p. 241, with tab.; *Flore des Serres*, t. 741; *Lem. Jard. Fl.*, t. 307; *Bot. Mag.*, t. 4659; *Peacatorca*, t. 4; *Jennings, Orch.*, t. 24; *Bateman, Second Cent. Orch. Pl.*, t. 132; *Gard. Chron.*, 3rd ser., 1887, ii. p. 333, f. 73; *Vitch's Man. Orch. Pl.*, iii. p. 42.

D. FARMERI ALBIFLORUM, *Hort.*—In this variety the sepals and petals are almost pure white, with the downy lip orange-coloured. In the *Gartenflora* it is called *D. Farmeri album*.—*India*.

FIG.—*Belg. Hort.*, 1860, p. 321, with tab.; *Gartenflora*, t. 595 (var. *album*).

D. FARMERI AUREO-FLAVUM, *Hook.*—A beautiful rich golden yellow-flowered variety, with the same quadrangular stems as in *D. Farmeri*, but not quite so strong-growing. It is somewhat intermediate in aspect between *D. Farmeri* and *D. chrysotozum*, but quite different from the latter in the four-angled stems; the sepals and petals are bright yellow, and the lip deep golden yellow and pubescent.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5451; *Orchid Album*, iii. t. 99.

D. FIMBRIATUM, *Hook.*—A very showy evergreen species, with stoutish terete erect stems 2 or 3 feet long, producing its drooping racemes from near the apex of the last year's stem; the leaves are distichous, lanceolate-acuminate, of a dark green colour; the flowers are of a uniform bright yellow, the petals ciliato-denticulate, the lip having a deeper yellow disk and beautifully fringed with

lacerate fimbriae at the margin. This plant will continue flowering from the old stems for years; it generally blossoms during the spring months, seldom lasting much more than a week in bloom. It is best grown in a basket or pot, with peat and moss.—*India: Nepaul.*

FIG.—*Hook. Exot. Fl.*, t. 71; *Paxton, Mag. Bot.*, ii. p. 172, with tab.; *Knockes and Wente. Fl. Cab.*, t. 109 (pale var.); *Veitch's Man. Orch. Pl.*, iii. p. 43.

D. FIMBRIATUM OCULATUM, *Hook.*—A beautiful variety of the preceding, producing its pendent flower spikes from near the top of the stems, which grow from 3 to 4 feet high; the flowers are large, of a rich orange-yellow, with a single



DENDROBIUM FIMBRIATUM OCULATUM.

(From the *Gardeners' Chronicle*.)

large deep sanguineous spot towards the base of the beautifully fringed lip. It blooms in March and April, and, if kept dry, lasts ten days in perfection. It succeeds best in a pot, in peat.

FIG.—*Bot. Mag.*, t. 4160; *Paxton, Fl. Gard.*, iii. t. 84; *Lem. Jard. Fl.*, t. 314; *L'Ill. Hort.*, t. 15; *Warner, Sel. Orch. Pl.*, ii. t. 19; *Paxton, Mag. Bot.*, vi. p. 169, with tab.; *Flore des Serres*, t. 125; *Hook. First Cent. Orch. Pl.*, t. 10; *Journ. of Hort.*, 1886, xii. p. 425, f. 76; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 97, f. 20.

SYN.—*D. Paxtoni*, Paxt. non Lindl.

D. FINDLAYANUM, *Parish et Rehb. f.*—A very pretty and desirable species, which in its habit of growth somewhat resembles *D. nodatum*. The stems are from 1 to 2 feet long, flexuose, knotty, with internodes 2 to 3 inches long, the knobs club-shaped and sulcate, developed above the sheathing bases of the leaves, which are linear-oblong acute, and produced on the young shoots, the flowers being borne on the older leafless ones on one- to three-flowered peduncles, from near the top of the stems; the sepals and petals are white suffused with pink, the broadly rounded tomentose lip deep orange-yellow on the diskal portion, paling to golden yellow at the margins. It blooms in January and February, and on that account will be found a valuable plant. It is named after Mr. James Findlay, a Burmese merchant. "This *Dendrobium* is found growing with *D. Jamesianum* in the Siam Hills in great luxuriance. Heat and moisture in the summer, and a cool air in the winter, suit it. In nature it is exposed to a considerable amount of sun, which ripens its new growths. Of the deciduous *Dendrobiums*, it is the first to flower in the winter" (Major-Gen. E. S. Berkeley, in *Gardeners' Chronicle*).—Moulmein.

FIG.—*Bot. Mag.*, t. 6438; *Orchid Album*, ii, t. 92; *L'Orchidophile*, 1887, p. 154.

D. FORBESII.—See *D. ATRO-VIOLEACEUM*.

D. FORMOSUM, *Rozb.*—A remarkably handsome compact-growing evergreen species, with stoutish terete pendulous hairy stems about a foot high, bearing thick ovate obliquely emarginate leaves, and racemes of four or five fragrant flowers from the top of the stem, the blossoms frequently 3 inches across; the sepals and the much broader petals are white, the lip white, with a bright yellow furrow down the centre; they last six weeks or more in perfection. This species may be grown either in a pot or basket with moss or peat. We have found it do best in a stove without shading of any kind. It makes a splendid plant for exhibition.—*India: Nepal, Sylhet; Moulmein, Tavoy, on trees and rocks.*

FIG.—*Bot. Reg.*, 1839, t. 64; *Parson, Mag. Bot.*, vi, p. 49, with tab.; *Flore des Serres*, t. 226; *Annales de Gand.*, 1848, t. 171; *Wall. Pl. As. Rar.*, t. 39; *Reichenbachia*, 2nd ser., i, t. 3; *Veitch's Man. Orch. Pl.*, iii, p. 45.

D. FORMOSUM GIGANTEUM, *Van Houtte*.—A magnificent variety of the preceding, much stronger in growth, and, like it, evergreen. The flowers, which are produced at the top of the stems, measure from 4 to 5 inches across; their colour is snow-white, with a broad blotch of rich orange-yellow on the centre of the lip. It requires the same treatment as *D. formosum*, and remains in bloom for about the same period.—Moulmein.

FIG.—*Flore des Serres*, t. 1633; *Gard. Chron.*, N.S., xvii, p. 369, f. 54; *Orchid Album*, vii, t. 308.

D. FUSCATUM, *Lindley*.—A very fine species in the way of *D. fimbriatum*. It has fascicled, nearly cylindrical, grooved stems 2 to 3 feet long, and lanceolate or ovate-lanceolate acuminate leaves 4 to 6 inches long; the flowers grow from nodes of the leafless stems in drooping racemes, which are 4 to 7 inches long, with a slender zigzag rachis, and sometimes bear as many as fifteen flowers on each; these are of a deep-toned orange-yellow (in native drawings almost orange-brown), 2 inches in diameter, the sepals and petals similar, oblong, somewhat incurved, the lip shorter, broadly oblate, cucullate, the surface downy, and the

margin fringed, having also two deep purple-crimson spots at the base, one on each side the column; the long drooping racemes are very conspicuous.—*India : Khasya and hot valleys of the Sikkim Himalaya.*

FIG.—*Bot. Mag.*, t. 6226.

D. FYTCHIANUM, *Bateman*.—One of the prettiest of the smaller-flowered species, and valuable for cutting on account of its effective rosy-eyed white flowers. The stems are slender, cylindrical, erect, a foot long, the younger ones leafy, the leaves being oblong-lanceolate; the flowers grow in terminal (? and lateral) racemes of eight or ten together, and are of dazzling whiteness; the sepals lanceolate, the petals roundish obovate, and the lip three-lobed, bearded at the base, its small oblong incurved lateral lobes rose-coloured, and forming a minute eye to the flower, and its obcordate apiculate middle lobe about as large as the petals, and, like them, pure white. This plant was erroneously figured as *D. barbatulum* in *Bot. Mag.*, t. 5444.—*Moulmein.*

FIG.—*Bot. Mag.*, t. 5444 (not t. 5918); *Bateman, Second Cent. Orch. Pl.*, t. 102.

D. FYTCHIANUM ROSEUM, *Berkeley*.—This pretty variety was introduced in 1886 by Major-Gen. E. S. Berkeley, from whom we acquired the stock. It was found some two hundred miles distant from the original habitat of the type, growing on trees where rains and dews are abundant during the growing season. It has rose-coloured flowers of a very pleasing hue. Blooms during February and March.—*Burmah.*

FIG.—*Orchid Album*, vii. t. 336.

D. GALLICEANUM, *Linden*.—This plant appears to have been imported by the Horticulture Internationale with a batch of *D. thyrsiflorum*, which it closely resembles. The flowers are said to be more open, and as a consequence larger; the colour of the lip, instead of being orange as in *D. thyrsiflorum*, is of a golden-yellow colour, softening into white at the edges. It is named after M. A. Gallice, a French Orchid amateur.—*Burmah.*

FIG.—*Lindenia*, vi. t. 241.

D. GIBSONI, *Paxl*.—A very showy evergreen Orchid, one of the finest of the yellow-flowered series. The stems are terete, tapering, pendulous, about 2 feet long with ovate-lanceolate acuminate leaves, and lateral racemes of ten to fifteen flowers produced near the end of the older stems; the sepals and petals are of a rich orange; the lip very broad, undulated and fringed, bright yellow, with two dark purple spots near the base. It blooms during the autumn months, lasts two weeks in good condition, and requires the same treatment as *D. formosum*.—*India : Khasya.*

FIG.—*Paxton, Mag. Bot.*, v. 169, with tab.; *Paxton, Fl. Gard.*, ii. p. 133, f. 204.

D. GOLDIEI, *Rchb. f.*—A very beautiful and distinct species, introduced by us from Torres Straits, in the way of *D. superbiens*, but differing from that species in having taller and more slender stems, longer and much narrower leaves, and more brilliantly coloured flowers. The flowers grow in drooping racemes from the upper part of the stems, and are of a rich claret-purple; the sepals lanceolate and tessellated with darker veins; the petals

broader, oblong, whole coloured; and the lip, which is quite distinct in form from that of *D. superbiana*, being much longer, narrower, and more acute at the point, also entirely of a claret-purple. This, like *D. superbiana*, flowers at different times of the year, and lasts three months in perfection. It also requires the same treatment as that species.—*Torres Straits*.

FIG.—*The Garden*, xiv. p. 244, t. 145.

D. GRATIOSISSIMUM, *Rchb. f.*—A delicate and pretty species resembling *D. crepidatum* in habit, with suberect stems, slender at the base, striated, and bearing ovate-lanceolate acute leaves, which fall before the flowers are produced. The latter are in fascicles of two or three together, $2\frac{1}{2}$ inches across; the sepals and petals are lance-shaped, white slightly shaded and tipped with rose; and the lip is entire, broadly ovate, white tipped with rose, and marked at the base with a large roundish yellow spot, faintly striped with orange.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5652; *Xenia Orch.*, ii. t. 193.

SYN.—*D. Bullerianum*.

D. GRIFFITHIANUM, *Lindley*.—One of the most glorious of the yellow spring-flowering *Dendrobes*. It has erect clavate stems, quadrangular on the upper part, and bearing at the top a pair of lanceolate-oblong obtuse leaves; the flowers grow in loose drooping flexuose many-flowered racemes from the side of the stem; the petals are ciliolate, and the lip ovate, pubescent, and denticulate; the plant resembles *D. densiflorum*, and its immense drooping spikes of blooms are of the richest golden-yellow, and remain in perfection for about a fortnight. It is very rare, and varieties are often sold for it which are much inferior to the typical form.—*Burmah*.

D. GUIBERTII, *Linden*.—A fine showy *Dendrobe*, resembling a strong-growing *D. densiflorum*, and possibly a variety of that species. It has clavate stems a foot high, bearing at the top a few broad ovate leaves, from amongst which appear the dense drooping racemes, 14 inches long, of yellow flowers, which have a rich golden-yellow lip, marked around the mouth of the funnel-shaped base with a stain of deep orange. It has been named in honour of the late M. Guibert, of Paris.—*Supposed to be Indian*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 258; *Revue Hort.*, 1876, p. 431, with tab.; *Puydt, Les Orch.*, t. 16.

D. HANBURYANUM.—See *D. LITUIFLORUM*.

D. HARRISONIAE.—See *LYCASTE HARRISONIAE*.

D. HARVEYANUM, *Rchb. f.*—A very curious and distinct species in the way of *D. Brymerianum*, but with smaller flowers. The stems are fusiform, furrowed, 6 inches long, and bear the lateral racemes of four or five flowers near the top; the colour of the flowers is deep chrome yellow, with a pair of orange-coloured blotches on the lip; the sepals are lanceolate-acute, the petals oblong-acute, ornamented with a dense marginal fringe, and the lip is almost circular, with an obscure basal callus, a rough surface, and a distinct fringe at the margin. It was introduced by the Liverpool Horticultural Company, and named after the late E. Harvey, Esq., of Aigburth, Liverpool, by whom it was first flowered.—*Burmah*.

D. HEDYOSMUM.—See *D. SCABRILINGUE*.

D. HENSHALLII.—See *D. TRANSPARENS*.

D. HETEROCARPUM.—See *D. AUREUM*.

D. HEYNEANUM, *Lindley*.—A charming deciduous species furnished with erect clavate stems, 6 to 8 inches high, which bear linear-lanceolate leaves, and produce from their upper part at different times of the year lateral racemes of several small white flowers, that have somewhat the appearance of sprigs of white-thorn; the lip is greenish-yellow beautifully streaked with violet. It is best grown on a block, with a moderate supply of moisture during the growing season. It continues about ten days in perfection.—*India: Western Peninsula*.

FIG.—*Wight, Ic. Pl. Ind. Or.*, t. 909.

D. HILLII.—See *D. SPECIOSUM HILLII*.

D. HOOKERIANUM.—See *D. CHRYSOTIS*.

D. HUTTONI.—See *D. SUPERBUM HUTTONI*.

D. INFUNDIBULUM, *Lindley*.—A species of the nigro-hirsute section, of great beauty, distributed in the first place under the name of *D. moulmeinese*, and resembling *D. formosum* in habit of growth and in flower, but with more slender stems, 1½ to 2 feet high, which are terete, with lanceolate acute unequally bi-lobed leaves, and glorious flowers, which sometimes measure 4 inches across, and, like those of its allies, are remarkable for their very broad petals; the sepals and petals are pure white, the serrulate lip white, having in the throat of its funnel-shaped base a large blotch of deep golden-yellow. The flowers are produced in great profusion from the top of the stems during the summer, and last five to six weeks in perfection. It will be most useful for supplying cut flowers for decorative purposes.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5446; *L'Ill. Hort.*, 3rd ser., t. 172; *Bateman, Second Cent. Orch. Pl.*, t. 122; *Gartenflora*, 1887, t. 1253; *Lindenia*, v. t. 199; *Orchid Album* x. t. 448.

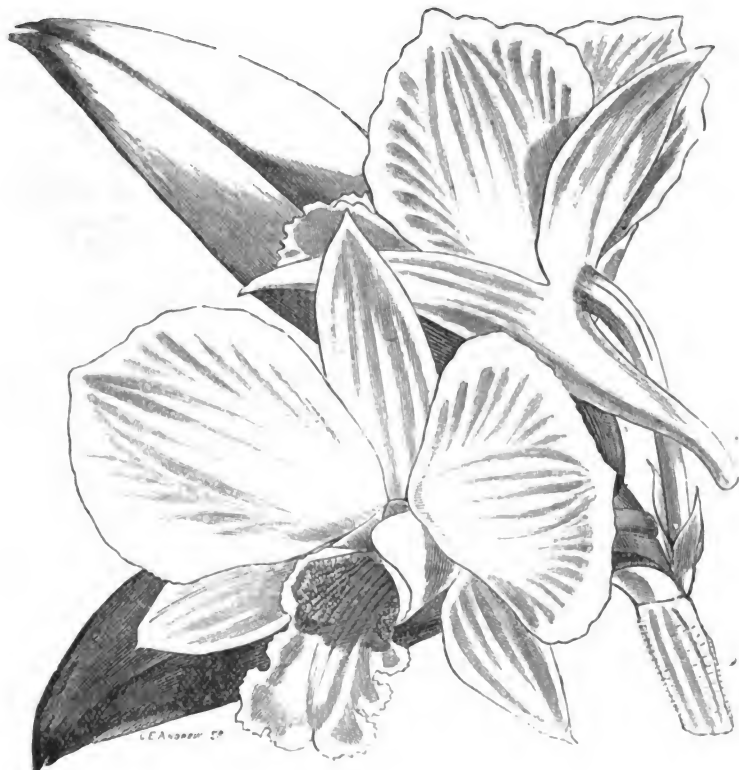
SYN.—*D. moulmeinense*.

D. INFUNDIBULUM CARNEOPTICUM, *Rehb. f.*—A very distinct variety of *D. infundibulum*, introduced by us from Burmah, in which the blotch on the lip, a broad central line, and a few streaks on the sides, are of a pretty flesh colour; whence, observes Professor Reichenbach, "I propose to give it the above-mentioned name." He adds: "The *D. Jamesianum*, *Rehb. f.*, is not distinguished from *D. infundibulum*, *Lindl.*, by the red paint on its lip, but by the side lobes of the lip being covered with asperities, and by the distinct shape of the lip itself."—*Burmah*.

D. JAMESIANUM, *Rehb. f.*—This is a very fine nigro-hirsute species, named in honour of the late Mr. James Veitch. It is in the way of *D. infundibulum*, and is considered by many to be a variety of it. The stems grow from 1 foot to 1½ foot high; the flowers are nearly as large as those of *D. formosum*, pure white, except that the lip is deeply stained with cinnabar-red. It blooms during

spring and summer. This, as well as the preceding species, succeeds best in the cool house. It is a grand exhibition plant, and its flowers last in perfection for several weeks if kept from the damp.—*Moulmein*.

FIG.—*Florist and Pom.*, 1869, p. 187, with fig. ; *Orchid Album*, v. t. 221 ; *L'Orchidophile*, 1886, p. 189 ; *Gardening World*, ix. p. 485.



DENDROBIUM JAMESIANUM.

(From the *Gardeners' Chronicle*.)

D. JAPONICUM.—See *D. MONILIFORME*.

D. JENKINSII, *Wallich*.—A beautiful dwarf evergreen species with clustered oblong tetragonal pseudobulbs, each bearing at the top a solitary oblong coriaceous retuse leaf, the whole not exceeding 2 or 3 inches in height. The flowers are very large for the size of the plant, and last ten days in beauty ; they grow on slender peduncles, solitary or geminate, from the side of the pseudobulbs, and are wholly deep yellow, the lip being very large and spreading, reniform retuse, slightly pubescent and ciliate, and measuring nearly an inch across. This species is best grown on a bare block of wood, suspended from the roof. A magnificent specimen of it was exhibited at South Kensington by Mr. Denning, when gardener to Lord Londesborough.—*India : Assam*.

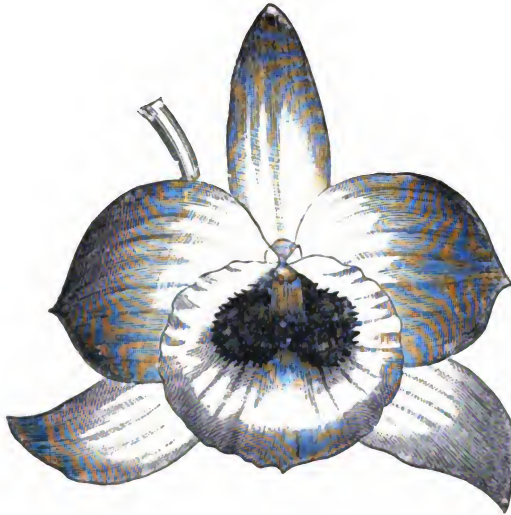
FIG.—*Bot. Reg.*, 1839, t. 37 ; *Warner, Sel. Orch. Pl.*, ii. t. 28.

D. JOHNSONIAE.—See *D. MACFARLANEI*.

D. JUNO, *Hort. Lawrence*.—It is the result of a cross between *D. Findlay-anum* and *D. Ainsworthii*, the form being intermediate between the two parents.

Pseudobulbs short and stout; flowers fine, bold, sweet-scented; sepals and petals white suffused with rose towards the tips; lip large and well opened, white tipped with rose; throat deep purple. Flowers in January.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1890, xx. p. 85, f. 13.



DENDROBIUM JUNO.

(From the *Journal of Horticulture*.)

FIG.—*Bot. Reg.*, 1845, t. 61; *Parson, Mag. Bot.*, xii. p. 97 (with plate); *Bot. Mag.*, t. 4527; *Lemaire, Jard. Fl.*, t. 143.

D. KINGIANUM ALBUM, *Williams*.—This variety has bulbs about 6 inches long; racemes many-flowered, about 1 foot long; flowers pure white.—*Australia*.

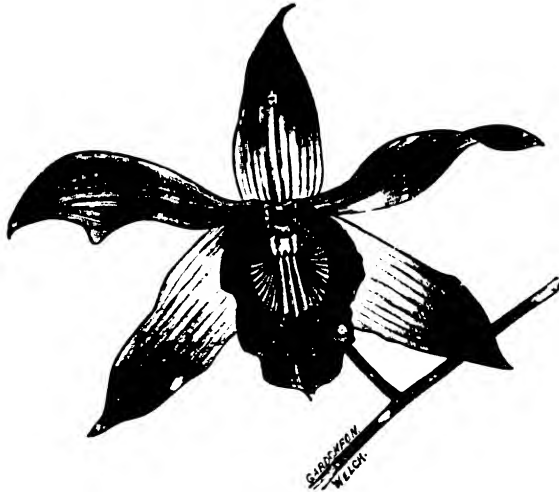
FIG.—*Orchid Album*, vii. t. 332.

D. LAMELLATUM, *Lindl.*—A very interesting species which has very flat and broad pseudobulbs, reminding one of some species of Cactus, from the top of which the flowers are produced. Leaves ovate, fleshy; the flowers are rather small creamy-white, with an orange-yellow crest in the throat. A plant of this curious species was exhibited by the Horticulture Internationale before the Royal Horticultural Society, on October 24th, 1893.—*Burma*: *Malay Archipelago*.

D. LASIOGLOSSUM, *Rehb. f.*—A somewhat small-flowered species, but well deserving the attention of Orchid-growers. The stems are slender, terete, drooping, 1 to 2 feet long, with flat lanceolate acuminate leaves, and at the nodes opposite the leaves short racemes of two or three flowers, which are white, except a few reddish-purple streaks on the erect lateral lobes of the lip, and a tuft of pale yellow hairs on the disk.—*Burma*.

FIG.—*Bot. Mag.*, t. 5825.

D. LEEANUM, *O'Brien*.—A distinct and handsome species introduced by Messrs. F. Sander & Co. along with *D. Phalenopsis Schröderianum*. The pseudobulbs measure as much as 3 feet, which produce the flowers at their tops; the sepals are white at the base and suffused with rose at the apical half; the petals are very narrow, slightly twisted and rosy-crimson in colour; the lip, which is very open, is green in the throat with rosy-red lines radiating to the margin and lower portion which are rosy-crimson. Named in honour of W. R. Lee, Esq., of Manchester, who has one of the most complete collections of *Dendrobes* in this country.—*New Guinea*.



DENDROBIUM LEEANUM.
(From the *Gardeners' Chronicle*.)

FIG.—*Gard. Chron.*, 3rd ser., 1891, x. p. 641, f. 88; *Journ. of Hort.*, 1891, xxiii. p. 537, f. 97.

D. LEECHIANUM, *Rehb. f.*—A very handsome hybrid, raised between *D. aureum* and *D. nobile*, by Mr. Swan, when gardener to W. Leech, Esq., Oakley, Fallowfield, Manchester. It is the same cross as that from which *D. Ainsworthii* was obtained, and it resembles that plant both in its growth and in the shape of its flowers, which are about 4 inches in diameter. The sepals and wavy petals are white tipped with rich rose-purple; the lobate lip is white, also purple-tipped, having a large radiating blotch of amaranth-crimson over the whole central area, a broad callous line with fine purple stripes running towards the base, and on each side radiating purple lines. The column is green with purple stripes. It flowers in January and February, and is very floriferous, since stems of but 4 inches high produce blossoms.—*Garden hybrid*.

FIG.—*Gard. Chron.*, N.S., xvii. p. 256, f. 35; *Reichenbachia*, ii. t. 50; *Journ. of Hort.*, 1890, xx. p. 85, f. 14.

D. LEUCOLOPHOTUM, *Rehb. f.*—A chaste and beautiful *Dendrobe*, closely allied to *D. barbatulum*, producing its flowers in November and December. The long pendulous racemes are many-flowered, about 18 inches long; flowers 1 inch or more in diameter, pure white except the side-lobes and base of lip, which are green.—*Malay Archipelago*.

FIG.—*Lindenia*, vii. t. 291.

D. LINAWIANUM, *Rehb. f.*—A truly handsome species of upright evergreen habit, with clavate proliferous deeply furrowed stems a foot or more high, which become swollen at the internodes, and hence moniliform or necklace-like. The

younger stems bear distichous oblong obtuse obliquely emarginate leaves, the flowers being produced in pairs from the joints of the stem on two-year old leafless growths; the flowers are $2\frac{1}{2}$ inches across, with oblong acute sepals and petals, the latter broader, both white at the base, passing into rosy-purple in the upper half, the serrulate lip much shorter, ovate, reflexed, tipped with bright crimson-purple, and having a crimson spot on each side the pubescent disk. This species, which blooms during the winter months, lasting two weeks in beauty, will grow in a basket, but we find it thrives best in a pot, with peat or moss. The plant is generally known in collections under the false name of *D. moniliforme*, which is quite another thing.—*China and Japan*.

FIG.—*Bot. Reg.*, t. 1314; *Bot. Mag.*, t. 4153; *Paxton, Mag. Bot.*, iii. p. 77, with tab.; *Maund, Botanist*, iv. t. 194; *Annales de Gand*, 1347, t. 137; *Orchid Album*, iii. t. 141.

D. LINAWIANUM MAJUS, *Williams*.—A fine variety of the preceding, growing to the same height, but having larger flowers, the latter being 4 inches across, and richer in colour. We saw this in very fine condition in the collection of R. Warner, Esq.—*Japan*.

D. LITUIFLORUM, *Lindley*.—A charming species, with slender terete fascicled pendulous yellowish deciduous stems, 2 to 3 feet in length, with a knob-like base, and in the younger stages bearing oblong-lanceolate leaves; it succeeds best in sphagnum moss, in a basket suspended from the roof; the flowers, produced on the older leafless stems, are large, and are borne in pairs or in four- to five-flowered fascicles from the nodes; the oblong-lanceolate sepals and broader petals are dark bright purple, the lip convolute at the base, and there white with heavy purple transverse stripes, the limb orbicular concave, turned up like a trumpet, the broad disk deep violet-purple surrounded by a yellowish velvety band, which is edged with purple. It blooms in March and April, and will last two weeks in perfection. It requires great attention as regards moisture during the growing season, but should be kept dry during winter.—*India, Assam: Tenasserim*.

FIG.—*Bot. Mag.*, t. 6050; *Warner, Sel. Orch. Pl.*, ii. t. 3.

SYN.—*D. Hanburyanum*.

D. LITUIFLORUM CANDIDUM, *Rehb. f.*—A lovely white-flowered variety, which first appeared in the collection of Sir Trevor Lawrence, Bart., Burford Lodge, Dorking.—*India*.

D. LITUIFLORUM FREEMANNI, *Rehb. f.*—A fine variety, having erect stems 1 to $1\frac{1}{2}$ foot high, and flowers similar to those of *D. lituiflorum*, but the lip is covered with dense hairs, and the zone on the lip is yellow. It blooms in April and May.—*Assam*.

D. LONGICORNU, *Lindley*.—A distinct and pretty species, in the way of *D. formosum*, but not so strong in growth. The stems are slender, hispid, erect, 1 to $1\frac{1}{2}$ foot long, with ovate-lanceolate obliquely pointed leaves, and terminal long-spurred flowers, solitary or in fascicles, which are white, except the dentate lip, which has a yellow centre. Of this there are two varieties, the one named *D. longicornu majus* being the best. It produces its blossoms from the top of the stem in May and June, and they continue in perfection a long time if kept in a cool house. Treatment the same as that for *D. formosum*.—*India: Sylhet, Nepal*.

FIG.—*Bot. Reg.*, t. 1315.

D. LOWII, *Lindley*.—A very distinct and handsome plant, growing in the way of *D. longicornu*, with upright terete nigro-hirsute stems 1 foot high, furnished with dark green ovate-oblong obliquely-tipped foliage, and producing from the side of the stem near the top dense seven-flowered racemes of large distinctly spurred flowers, measuring about 2 inches across, of a bright yellow colour, with six red veins on the base of the lip, set off by crimson fringes. This will succeed in a pot or basket, or on a block, provided it has a liberal supply of water when in vigorous growth. We have seen it bloom in summer and also late in autumn.—*Borneo*.

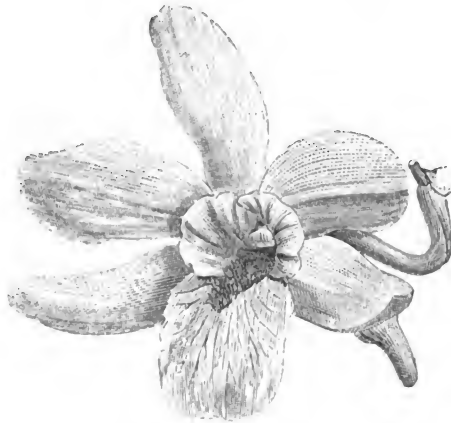
FIG.—*Bot. Mag.*, t. 5303; *Flore des Serres*, t. 2395.

D. LOWII PLEIOTRICHUM, *Rehb. f.*—A variety without the red lines on the lip.

D. LUNA, *Hort. Lawrence*.—This hybrid is a cross between *D. Ainsworthii* and *D. Findlayanum*. The growth of this favours the latter parent, but the bulbs are not quite so distinctly noded. The flowers are very delicate and beautiful; sepals and petals yellowish-white, faintly tipped with pale rose; lip white with pale yellow throat. Blooms in January. Sweet scented.—*Garden hybrid*.

D. LUTEOLUM, *Baleman*.—A very distinct and desirable species, in which the stems are erect and terete, and bear lanceolate leaves, and simultaneously on the upper part of the stems a profusion of short lateral two-to four-flowered racemes of pale primrose-coloured flowers, of which the lip has roundish lateral lobes, and the middle lobe a downy yellow disk marked by a few red lines. It flowers during the months of January and February, and lasts several weeks in perfection.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5441; *Vitch's Man. Orch. Pl.*, iii. p. 57; *Journ. of Hort.*, 1886, xii. p. 175, f. 29.



DENDROBIUM LUTEOLUM CHLOROCENTRUM.

(From the *Gardeners' Chronicle*.)

D. LUTEOLUM CHLOROCENTRUM, *Rehb. f.*—This variety is altogether superior to the type, the flowers being much larger and of better substance. It bears tufts of green hairs on the middle of the lip. One of our own introductions.—*Moulmein*.

FIG.—*Gard. Chron.*, N.S., xix. p. 340, f. 48; *Orchid Album*, vii. t. 322.

D. MACCARTHIAE, *Hooker*.—The "Rainy-month flower" or "May-flower" of Ceylon, a really splendid species, with terete pendulous stems as thick as a goosequill, green spotted with crimson, and having a bulbiform base; these

stems bear a few lanceolate acuminate leaves on their upper part, and opposite to them at the nodes a four- or five-flowered raceme of extremely beautiful flowers, which are flattened vertically so as to appear half expanded, and consist of lanceolate sepals, oblong lanceolate broader petals of a bright pinkish-rose, and a spatulate-trapeziform lip, which is white in the lower part, with small purple spots in the throat, a large purple blotch on the disk, and an ovate rosy-pink front lobe marked with lines of darker rose. This splendid Orchid is difficult to grow, and should be kept in a small basket or on a block with sphagnum, as near the light as possible. It is one of the finest of the *Dendrobies*, blooms during the summer, and has the advantage of lasting six weeks or two months in perfection. The flowers are nearly 3 inches long.—*Ceylon forests*.

FIG.—*Bot. Mag.*, t. 4886; *Batem. Second Cent. Orch. Pl.*, t. 158; *Orchid Album*, vii. t. 319; *Lindenia*, viii. t. 349; *Veitch's Man. Orch. Pl.*, iii, p. 58.

D. MACFARLANEI, *Rehb. f.*—The pseudobulbs are stated to resemble those of *D. Farmerii*. It was introduced by the Rev. S. M. Macfarlane from New Guinea in 1882. A glance at our illustration will give a good idea of the size and form



DENDROBIUM MACFARLANEI.
(From the *Gardening World*.)

of the flower. The sepals and petals are pure white, lip also white with a purple area around the purple callus, and a large purple spot at the end of each side lacinia.—*New Guinea*.

FIG.—*Gardening World*, iii. p. 247 (woodcut); *Journ. of Hort.*, 1890. xx. p. 177, f. 26; *Reichenbachia*, 2nd ser., ii. t. 61 (*D. Johnsoniae*); *Gard. Mag.*, 1892, p. 102.

SYN.—*D. Johnsoniae*; *D. nireum*.

D. MACRANTHUM.—See *D. SUPERBUM*.

D. MACROPHYLLUM, Hort.—See *D. SUPERBUM*.

D. MACROPHYLLUM, A. Richard.—A fine and distinct species, perhaps more curious than beautiful, but so remarkable as to be well worth a place in collections. The stems are about a foot high, clavate, deeply furrowed in the upper, thickened portion, and terminated by three or four oblong unequally bi-lobed pale green leaves, from the centre of which springs the erect raceme, 1 foot high, many-flowered, and nodding at the apex, the blossoms being 2 inches in diameter, hairy externally; the sepals are greenish yellow, and the smaller spathulate petals dirty white, while the large dilated lip is yellowish-green, the side lobes radiately marked with forked purple veins, and the middle lobe bearing a few radiating lines of purple dots. Altogether a singular and very interesting plant, which at first received the name of *D. Veitchianum*, but proves to be a form of *D. macrophyllum*; the type plant of Richard has, according to Sir J. D. Hooker, both larger leaves and longer flower spikes—perhaps the result of excessive luxuriance in its native clime.—*Java, in hot jungles*.

FIG.—*Rich. Voy. Astr.*, t. 9; *Bot. Mag.*, t. 5649; *De Vr. Illust.*, t. 5; *Orchid Album*, viii. t. 339.

SYN.—*D. Veitchianum*; *D. macrophyllum Veitchianum*.

D. MACROPHYLLUM DAYANUM, H. Low.—This is considered to be a superior variety to the Java plant.—*Borneo*.

D. MACROPHYLLUM VEITCHIANUM.—See *D. MACROPHYLLUM*.

D. MARGINATUM.—See *D. XANTHOPHLEBIUM*.

D. MARMORATUM, Rchb. f.—A very pretty species, allied to *D. transparent*. The sepals and petals are white, blotched at the extremities with purple, and the ciliate lip is purple.—*Burmah*.

D. MELANODISCUS, Rchb. f.—Another one of Sir Trevor Lawrence's hybrids, the result of a cross between *D. Findlayanum* and *D. Ainsworthii*. The pseudobulbs are intermediate between the two parents; the sepals are white tipped and suffused with purple; the petals also white with rosy-purple tips; the lip is yellowish-white tipped with rosy-purple, having a dark reddish-purple area on the basilar portion.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxii. p. 261, f. 48 (var. *pallens*); *Reichenbachia*, 2nd ser., i. t. 12.

D. MELANOPHTHALMUM, Rchb. f.—This is supposed by Reichenbach to be a natural hybrid: "Here is a *Dendrobe* apparently originated by a cross between *Dendrobium Wardianum* and *D. crassinode*. The stems are nearly those of *D. Wardianum*, though one must admit they are a little more nodate. The flowers are those of *Dendrobium crassinode Barberianum*, but there are two dark eye-spots. That gives you an idea of the plant" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1886, xxv. p. 426).—*Burmah*.

SYN.—*D. crassinodi-Wardianum*.

D. MONILIFORME, Swartz.—This is by no means an exhibition plant, but although it cannot lay claim to much beauty, its flowers, which are pure white, with a few purple spots on the lip, yield a delicious fragrance. The stems are fascicled, terete, pendulous, about a foot long, with linear-lanceolate bluntish leaves, which fall away and are succeeded by the fragrant white flowers, which grow solitary or in pairs from the upper nodes, and are about $1\frac{1}{2}$ inch in diameter. Being a native of Japan and the adjacent islands, it will make a good addition to the cool-house Orchids, and will doubtless be very useful for cutting for decoration. The plant so long known in gardens as *D. moniliforme* was not the one originally so called, and has now been named *D. Linawianum*.—Japan.

FIG.—*Bot. Mag.*, t. 5482; *Hook. First Cent. Orch. Pl.*, t. 11.

SYN.—*D. japonicum*; *Onychium japonicum*.

D. MOSCHATUM, Wallich.—A handsome evergreen species, which produces stout pendulous terete striated stems 4 to 6 feet long, furnished with oblong or oblong-ovate somewhat leathery striated leaves, and bearing pendent racemes of eight or ten large flowers from the sides of the old stems near the top. The flowers are large and spreading, $3\frac{1}{2}$ inches across, of a creamy buff suffused with rose, the lip slipper-shaped, pale yellow, darker at the base, and ornamented within on each side with a large eye-like blotch of deep blackish-purple; they are agreeably musk-scented. It blossoms in May and June, and lasts about a week in a fresh state.—India: Eastern Peninsula.

FIG.—*Bot. Mag.*, t. 3837; *Maxim. Bot.*, i. t. 37; *Wall. Pl. As. Rar.*, t. 195; *Parton, Mag. Bot.*, ii. p. 241, with tab.; *Hook. Ex. Fl.*, iii. t. 184; *Puydt, Les Orch.*, t. 15; *Hart. Parad.*, iii. t. 7; *Hook. First Cent. Orch. Pl.*, t. 13.

SYN.—*D. Calceolaria*.

D. MOSCHATUM CUPREUM, Rehb. f.—A large-growing evergreen plant, which has been cultivated under the name of *D. Calceolus*, that being apparently a misreading of *D. Calceolaria*, a synonym of *D. moschatum*, under which all these plants are sometimes included. It has stout pendulous stems 4 feet long when well grown, and bears its flowers in racemes of twelve or more together, which proceed from the top of the old stems. The flowers are large, but not equal in size to those of *D. moschatum*; the sepals and petals apricot-yellow, and the slipper-shaped lip of a deeper golden yellow with an orange-coloured spot on each side near the base. It blooms during the summer months, lasting a week in perfection. This is best grown in a pot with moss and peat.—India.

FIG.—*Orchid Album*, iv. t. 165.

SYN.—*D. Calceolus*, Hort.; *D. cupreum*.

D. MOULMEINENSE.—See *D. INFUNDIBULUM*.

D. MURRHINIACUM, Rehb. f.—This hybrid was first flowered in 1888 by R. H. Measures, Esq., of Streatham, and is said to be a cross between *D. nobile* and *D. Wardianum*. The pseudobulbs resemble those of the last-named parent. The late Professor Reichenbach says of it:—"The flower is equal to that of a good *D. Wardianum*, snow white, with purple tips to the sepals and petals; the lip has a large purple obcordate blotch at the base of the disk, with some lateral darker stripes, and a light purple apex."—Garden hybrid.

D. MUTABLE, *Lindley*.—A very pretty evergreen species, with rather slender terete erect striated stems, furnished with numerous distichous elliptical sessile blunt fleshy leaves, which become smaller upwards, the stems terminating in a dense panicle of medium-sized flowers, which are in some forms white, and in others white tinted with rose; the lip is deeply emarginate or obcordate, and bears on its disk three crests, which are blunt at the apex and tinted with yellow or orange. The flowers are produced on the leafy stems at different times of the year, and last two weeks in bloom. It is best grown in a pot with peat.—*India*.

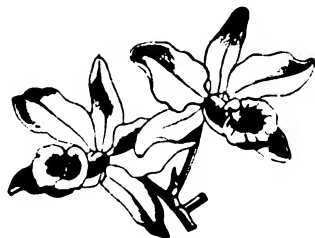
FIG.—*Bot. Reg.*, 1841, t. 1; *Bot. Mag.*, t. 5285.

SYN.—*D. triadenium*; *Onychium mutabile*.

D. NESTOR, *O'Brien*.—A hybrid between *D. Parishii* and *D. anosmum*, raised and flowered by Charles Winn, Esq., of Birmingham. "The expanded flowers are 3 inches in diameter; sepals and petals white, tinged with rosy-lilac; lip white at the base, streaked with purple, which at each side of the median portion of the lip merges into a large bright purple blotch, the margin and front of the lip being pale rosy-lilac; like the petals, the edge and surface of the lip are pubescent, and the flowers have an odour resembling medicinal rhubarb, a peculiarity common to this section of *Dendrobies*" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 718).—*Garden hybrid*.

D. NIVEUM.—See *D. MACFARLANEI*.

D. NOBILE, *Lindley*.—A magnificent and justly popular free-flowering evergreen species. The erect furrowed stems are a foot or more in height, clustered, terete, compressed, slightly thickened upwards, bearing distichous oblong obliquely emarginate leaves, and on the older ripened stems clusters of two or three flowers from the upper nodes; the blossoms are rather large and very showy, with oval sepals and much broader undulated petals, white heavily tipped with rose, the lip rolled up at the base, downy on both surfaces, roundish ovate, creamy white with rosy tip, and a deep crimson spot in the throat. It blooms during the winter and spring months, lasting three or four weeks in good condition if kept in a cool house. It will grow either in a pot or basket, with moss or peat. This is one of the finest exhibition plants we have; but to keep it for exhibition, it must be put in the greenhouse, shaded from the sun, and left there till it is wanted, when it must be forced into bloom. During the time it is in a cool house give it but little water, only enough to keep it from shrivelling. This species may be had in full flower from January to June by procuring a number of plants and treating them successively.—*India*; *China*.



DENDROBIUM NOBILE.

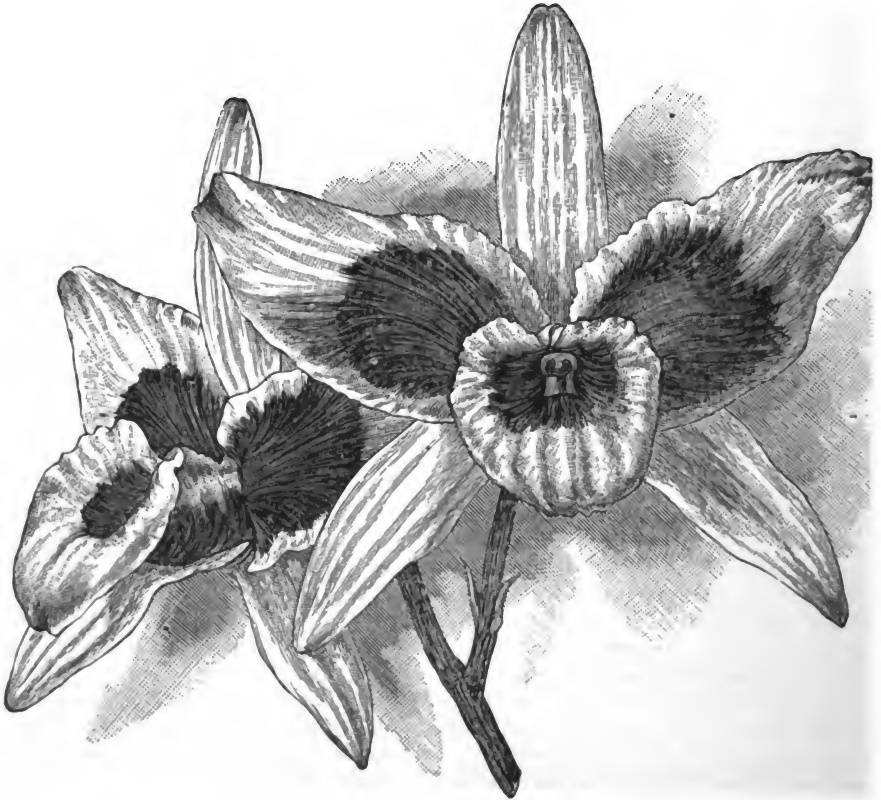
FIG.—*Sert. Orch.*, t. 3; *Id.*, t. 18 (*coeruleascens*); *Paston, Mag. Bot.*, vii. p. 7, with tab. (very poor); *Gard. Chron.*, N.S., xi. p. 564, f. 79; *Hart. Parad.*, i. t. 11; *Veitch's Man. Orch. Pl.*, iii. p. 63; *Gard. Chron.* 3rd ser., 1889, v. p. 561, f. 96; *Id.*, 1892, xi. p. 725, f. 104; *Journ. of Hort.*, 1890, xc. p. 63, f. 9 (*Burford var.*); *L'Orchidophile*, 1890, p. 304.

SYN.—*D. coeruleascens*.

D. NOBILE ALBUM, *Hort.*—This variety has pure white sepals and petals lip yellowish-white, with the usual crimson-purple blotch in the throat.

FIG.—*Le Moniteur d'Hort.*, Aug. 10, 1889; *L'Orchidophile*, 1890, p. 304.

D. NOBILE BALLIANUM, *O'Brien.*—"The flower is of fine form and wax-like substance, and its chief peculiarity is that the more or less dark purple disk seen in the lip of the type, and the purplish colour in the segments of many of the forms are almost entirely suppressed. The flowers of *D. nobile Ballianum* are of a clear shining white, with a pale pearly-pink blush, which is more pronounced towards the tips of the sepals, petals, and lip; the disk of the labellum is of a very pale soft dull rose-pink, the front pale primrose, and the apex blush pink, and differs from any form of *D. nobile* imported" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 322).—*India.*



DENDROBIUM NOBILE COOKSONIANUM.

(From the *Gardening World*.)

D. NOBILE COOKSONIANUM, *Rchb. f.*—A very curious and wonderful sport, which first made its appearance in the collection of Theodore Lange, Esq., of Heathfield House, Gateshead. Some plants were thence acquired by N. C.

Cookson, Esq., of Wylam-on-Tyne, who was the first to exhibit it. It was dedicated to him by the late Professor Reichenbach. About the same time it also appeared in the collection of the late Right Hon. W. H. Smith, while under the charge of Mr. H. Knight, now Superintendent of the Royal Parks at Laeken, Brussels, who sent us flowers for determination, and as we believed the sport not to be constant, asked him to prove it another year. In the meantime it was described by the late Professor Reichenbach. The sepals are similar to those of the type, but it is in the petals that the difference is found, these being in reality like two lips flattened out so as to take the form of petals, their markings and their surfaces being identical with those of the lip.—*India*.

FIG.—*Lindenia*, viii. t. 340; *Vitch's Man. Orch. Pl.*, iii. p. 64; *Gardening World*, iv. p. 393; *Journ. of Hort.*, 1888, xvi. p. 237, f. 29; *Id.*, 1890, xx. p. 63, f. 10.

SYN.—*D. nobile* *Heathfieldianum*.

D. NOBILE HEATHFIELDIANUM.—See *D. NOBILE COOKSONIANUM*.

D. NOBILE INTERMEDIUM, *Hort.*—A pretty and distinct variety, which grows in the same way as *D. nobile* itself, and flowers at the same time. The sepals and petals are white, and the lip white, with a dark crimson spot in the centre. A desirable variety for winter decoration. A scarce plant, and one of the best.—*India*.

D. NOBILE MAJUS.—See *D. NOBILE SANDERIANUM*.

D. NOBILE NOBILIUS, *Rehb. f.*—Undoubtedly the largest flowered form of *D. nobile* yet introduced. The flowers are about 4 inches in diameter, having broad sepals and petals, white richly suffused with rosy-purple, darker towards the tips; the lip is white, margined with rosy-purple around the anterior half, and having an intense purplish-crimson blotch in the centre. It flowers during the winter and spring months, and is very rare.—*India*.

FIG.—*Orchid Album*, v. t. 214.

D. NOBILE PALLIDIFLORUM.—See *D. PRIMULINUM*.

D. NOBILE PENDULUM, *Hort.*—A fine variety of *D. nobile*, with large flowers, richer in colour than those of the type, and produced at the same time. This is often called Rucker's variety. It is best grown in a basket, on account of its pendulous habit.—*India*.

D. NOBILE SANDERIANUM, *Rehb. f.*—A variety described by the late Professor Reichenbach as follows:—"This was introduced by Mr. F. Sander four years ago. It has now flowered three times, and it has always kept its full grandeur. The flowers are of a dazzling purple, and the reticulation of transverse nerves is very strong; the mid-line of the mentum is green; the whole disk of the lip is covered by a grand dark blotch, and all around it is rosy-purple, only leaving a small white area in front, traversed by purple veins, and with a white border to the superior part. All the petals I saw were white at the base. I have to thank Sir Trevor Lawrence for the opportunity of comparing specimens of *D. nobile nobilius* with this. That lovely plant has all the parts narrower and

longer, and the petals purple at the base inside. The lip is much narrower. *D. nobile Sanderianum* would appear to be very free-flowering" (*Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 554).

FIG.—*Reichenbachia*, ii. t. 58.

SYN.—*D. nobile majus*.

D. NOBILE WALLICHIANUM, *Hort.*—This beautiful variety has much taller stems, darker foliage, and richer-coloured flowers than the type. It blooms during the winter and spring months, and with care may be retarded until the summer, when it makes a noble and valuable specimen for exhibition purposes.—*India*.

SYN.—*D. Wallichii*.

D. NODATUM.—See *D. APHRODITE*.

D. OCHREATUM, *Lindley*.—A remarkably handsome deciduous species, of drooping habit. The stems are about a foot long, stoutish, with thickened nodes streaked and spotted with red; the leaves are ovate-lanceolate acuminate, oblique at the base, and sessile. The flowers are produced on the young growth in March and April simultaneously with the leaves, the peduncles two-flowered, the sepals and petals bright orange, the lip broad, roundish, cucullate from a convolute base, villous, with a recurved margin, and a large sanguineous crimson blotch in the centre. It lasts in beauty about a fortnight, and is best grown in a basket with moss, and suspended from the roof.—*India: Khasya Hills*.

FIG.—*Bot. Mag.*, t. 4450; *Parton, Mag. Bot.*, vi. p. 265, with tab.

SYN.—*D. Cambridgeanum*.

D. OWENIANUM, *O'Brien*.—This was raised by N. C. Cookson, Esq., and resulted from a cross between *D. Linavianum majus* and *D. Wardianum*. Mr. O'Brien describes it in the *Gardeners' Chronicle* as follows:—"The pseudobulbs are stout and erect, showing markedly the swollen appearance below each joint as seen in *D. Linavianum*; the flowers are borne in twos and threes on pedicels $2\frac{1}{2}$ to 3 inches in length, which carry the flowers free of the pseudobulbs in a most graceful manner; the flowers are over $3\frac{1}{2}$ inches across the expanded petals, which are 1 inch wide, and slightly wavy at the edge; the sepals are ligulate, the lateral ones pointed, and slightly curved back, white, faintly tinged with lilac, and tipped with rosy-purple; the petals are ovate-oblong, slightly acuminate, pure white, tipped with rosy-purple; the lip folded over the column at the base, the blade broadly ovate, and terminating in a slightly recurved point in the front; the base of the labellum is blush-white, from which radiate purple and dark purplish-crimson lines, which merge into a heavy blotch on the dark yellow disk; the anterior portion of the lip is pure white, tipped with rose-purple, and the whole flower has a soft wax-like appearance" (*Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 226).—*Garden hybrid*.

FIG.—*Gardening World*, ix. p. 417; *Gard. Mag.*, 1893, p. 150.

SYN.—*D. chlorostele Owenianum*.

D. PALLENS, *Hort. Lawrence*.—Sepals and petals white, tipped with pale rose; lip yellowish-white, faintly tipped with rose at the apex. Flowers in January. Sweet scented. It is a cross between *D. Findlayanum* and *D. Ainsworthii*.—*Garden hybrid*.

D. PARISHII, *Rehb. f.*—A very beautiful free-flowering species. The stems are from 1 to 2 feet long, very thick throughout their entire length, decurved, and bearing flowers in the second year, after the leaves have fallen; the leaves oblong-lanceolate, leathery, and notched at the ends; the flowers, which are produced in spring, grow generally in pairs or in threes, and are of a beautiful dark rose, the downy lip lighter in colour along the centre, with a dark purple blotch on each side of the throat. It is a very distinct species, and makes a good exhibition plant, on account of its distinct colour.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5488; *Jennings, Orch.*, t. 39; *Xenia Orch.*, ii. t. 152; *Bateman, Second Cent. Orch. Pl.*, t. 126.



DENDROBIUM OWENIANUM.
(From the *Gardening World*.)

D. PAXTONI, *Paxt.*—See *D. FIMBRIATUM OCLATUM*.

D. PAXTONI, *Lindley*.—See *D. CHRYSANTHUM*.

D. PHALAENOPSIS, *Fitzgerald*.—A beautiful species allied to *D. bigibbum*, but very much superior in respect to the size and colour of its flowers. The

stems are erect, rather slender, upwards of $1\frac{1}{2}$ foot long, contracted towards the base, and bearing near the top a few (eight or ten) lanceolate leaves 5 inches long the racemes are terminal, on erect peduncles, 10 inches long, the flowers about fifteen in number, 2 to $2\frac{1}{2}$ inches across, and brilliantly coloured; the sepals are oblong-ovate, 1 inch long, magenta with a whitish centre, the spur deep purple; the petals are rhomboid-obovate, over an inch broad, of a warm magenta-purple, the lower half paler in the centre; the lip intensely rich deep rosy-purple, 1 inch long, acute, with the broad lateral lobes meeting over the column, its base forming at the hinge a second spur, and the front lobe deflexed, magenta with maroon-crimson veins, the throat rich maroon-crimson; the veins of the throat are thickened and covered with dark papillae. It flowers generally in autumn, but we have frequently seen it in flower in spring.—*North Australia; New Guinea; Timor.*

FIG.—*Orchid Album*, iv. t. 187; *Gard. Chron.*, n.s., 1886, xxvi. p. 556, f. 110; *Lindenia*, vi. t. 280; *Reichenbachia*, 2nd ser., i. t. 42; *Bot. Mag.*, t. 6817; *Fitzgerald's Australian Orchids*, vol. i.; *Veitch's Man. Orch. Pl.*, iii. p. 69.

D. PHALAENOPSIS ALBUM, *Hort.*—A pure white variety, flowered by Mr. P. McArthur, of Maida Vale. The flowers are nearly 4 inches across; lip very broad; sepals and petals more rounded than in the type. The plant which flowered produced two flower spikes, one with thirteen and the other with fifteen flowers. We are informed by Dr. Gorton that the plant realised 150 guineas.

D. PHALAENOPSIS, "*Appleton variety.*"—A fine variety was exhibited before the Royal Horticultural Society, on October 24th, 1893, by W. M. Appleton, Esq., of Tyn-y-Coed, Weston-super-Mare. It has large flowers; sepals and petals white rosy-lilac at the extremities; lip white, rich purple at the tip.

D. PHALAENOPSIS DELLESENSE, *Hort.*—A lovely delicate variety, with pale flowers; sepals and petals white at the base, faintly suffused and veined towards the apex with delicate rosy-magenta; lip pale sulphur-yellow at the base, the mid-lobe rosy-purple veined with magenta-purple, side lobes white. It was first flowered with Baron Sir J. H. W. Schröder, The Dell, Egham.—*New Guinea.*

D. PHALAENOPSIS SCHRÖDERIANUM, *Hort.*—This fine novelty was imported by Messrs. F. Sander & Co. from North-east New Guinea, and may be said to be a geographical form of the original *D. Phalaenopsis* from North Australia which was figured in the *Orchid Album*. This present variety is more robust in its habit of growth than the Australian form, and the colour of the flowers ranges from pure white to a deep violet-purple. In some instances the sepals are white and the petals deep violet-purple, which forms a beautiful contrast with the rich colouring of the lip. It is a plant that should be grown in quantity, flowering as it does in the autumn months, it will be found very valuable.—*New Guinea.*

FIG.—*Gard. Chron.*, 3rd ser., 1891, x. p. 642, f. 89, p. 643, ff. 90, 91; *Journ. of Hort.*, 1891, xxiii. p. 325, f. 66; *The Garden*, 1893, xliii. p. 236 (plate).

D. PHALAENOPSIS STATTERIANUM, *Sander.*—A beautiful variety with flowers of a much deeper rosy-purple, and the lip of a different form to that of the type, being narrower and having the side lobes shorter.—*New Guinea.*

FIG.—*Reichenbachia*, 2nd ser., i. t. 7.

D. PIERARDII, *Rozb.*—A delicately pretty species of deciduous habit, useful on account of its flowering during the winter and spring months. The stems are long (in its native country 6 feet), moderately slender, terete, drooping, furnished with lanceolate acuminate leaves, and flowering in the same way as *D. superbum*, that is in fascicles of two blossoms from each node through the greater part of the length of the stem. The flowers are transparent blush-white, with a spathulate pale yellow lip, having the involute claw feathered with purple lines; they last three weeks in beauty. It requires the same treatment as *D. superbum*.—*India: Chittagong.*



DENDROBIUM PIERARDII.

FIG.—*Bot. Mag.*, t. 2584; *Hook. Ex. Fl.*, t. 9; *Loddiges, Bot. Cab.*, t. 750; *Bot. Reg.*, t. 1750; *Journ. of Hort.*, 1889, xviii. p. 293, f. 46.

D. PIERARDII LATIFOLIUM, *Hort.*—In this variety the stems are stouter and darker in colour, and the flowers, though of the same form and colour, are much finer than in the type; it blooms in April and May. It requires the same treatment, and is a useful plant for exhibition.—*India.*

FIG.—*Flore des Serres*, t. 955.

D. PITCHERIANUM, *Rchb. f.*—This is supposed to be a natural hybrid between *D. primulinum* and *D. nobile*. It was described by the late Professor as follows:—"The flowers are equal to those of a good *D. primulinum*; both sepals and petals are much like those of that species, as they are rather narrow and straight; the ligulate blunt sepals are whitish, rosy, with fine purple tips; the petals are broader, with a deep purple tip, and a broad distinct rosy mid-line from the tip to the base. It is an exceedingly curious and rare fact, that the colours of the flowers are far deeper outside; the lip is very interesting; from a short stalk, green at the base, it is enlarged into a heart-shaped semi-oblong sub-acute body. This, however, is the outline after artificial expansion, and it answers well the outline of the lip, not of *D. primulinum*, but of *D. nobile*. Naturally the lip is involute at the base and sub-acute before the apex, thus making a sort of a goitre with a flat surrounding margin. Its colour is light sulphur. The callous abrupt line in the middle of the disk before the base is whitish. The apex of the lip is purple, and there are dark purple, nearly parallel stripes on both sides of this callous part. Both sides of the surface of the lip are most densely covered with very short hairs" (*Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 392).—*India.*

D. PLATYCAULON, *Rolfe.*—This species resembles *D. lamellatum*, but the flowers are larger, and it differs in the shape of the lip. The flowers are said to be "over an inch in length and straw-coloured." It was imported by Messrs. Sander & Co.—*Philippine Islands.*

D. POLYPHLEBIUM, *Rchb. f.*—This is supposed to be a natural hybrid between *D. Pierardii* and *D. rhodopterygium*, which latter it much resembles. It was discovered by Major-General E. S. Berkeley, and resembles in growth *D. Pierardii*

latifolium; it has pseudobulbs 12 to 18 inches long. The sepals and petals are broader than those of *D. Pierardii* and bright rosy-purple in colour. Lip much deeper in colour than the petals, fringed at the border and margined with white, the whole being veined with purple. It should be grown in a basket or on a block of wood. The variety *Emerici* differs in having a broader white or pale yellow margin to the lip, and lighter coloured blotches.—*Burmah*.

FIG.—*Orchid Album*, vii. t. 299; *Gard. Chron.*, 3rd ser., 1889, vi. p. 244, f. 33 (and var. *Emerici*).

D. PRIMULINUM, *Lindley*.—A beautiful free flowering deciduous species, of pendulous growth; the stems terete and clustered, furrowed, a foot or more in length, the young ones leafy at the top, the few leaves being oblong obtuse and obliquely emarginate. The flowers are solitary; the oblong sepals and petals white tipped with pink, the broadly obovate downy lip pale sulphur-yellow, its sides convolute at the base and streaked with purple; they are produced in two rows along the stem in April and May, and last in perfection ten days. This species is best grown in a basket with sphagnum, and makes a fine plant for exhibition.—*India*.

FIG.—*Gartenflora*, t. 326; *Bot. Mag.*, t. 5003; *Veitch's Man. Orch. Pl.*, iii. p. 70; *Orchid Album*, vi. t. 286.

SYN.—*D. nobile pallidiflorum*.

D. PRIMULINUM GIGANTEUM, *Hort.*—A magnificent variety, the flowers of which are very large, white tipped with pink, the sulphur-coloured lip being particularly fine. This is a free-flowering plant, which ought to be in every collection, and is best grown in a basket, as it is pendulous in habit. It is grown in some collections under the name of *D. cucullatum giganteum*.—*India*: *Sikkim*.

D. pulchellum
D. PULCHELLUM, *Roxb.*—An exceedingly pretty dwarf species with terete striate decumbent proliferous stems, oblong-lanceolate leaves, and solitary flowers growing from the joints of the leafless stems; it loses its leaves after it has finished growing, and generally begins to show flower in February all up the stem, lasting two weeks in bloom. The sepals are pale purple, the petals much larger, oval obtuse, of a deep purple-lilac, and the lip broadly orbicular, concave, villous, with a large blotch of orange in the centre surrounded by a zone of white and tipped with purple, the whole margin being beautifully and finely fringed. The plant does well in a basket with moss. There is some doubt as to this being the true plant of Roxburgh, who describes it as having flowers in racemes, but it is certainly the *D. pulchellum* of gardens, as figured by Hooker, Loddiges, and Maund, quoted below.—*India*: *Sylhet*.

FIG.—*Bot. Mag.*, t. 5037; *Loddiges, Bot. Cub.*, t. 1935; *Maund, Botanist*, t. 5.

D. "RAINBOW."—This is another cross which was obtained by Sir Trevor Lawrence, Bart., between *D. Findlayana* and *D. Ainsworthii*; pseudobulbs intermediate between those of the two parents. The flowers measure $3\frac{1}{2}$ inches across; sepals slightly twisted, rosy-purple; petals broad, white, the extremities veined with rose-magenta; lip white, tipped with rose-magenta; throat deep crimson-magenta, with a light orange zone around it.—*Garden hybrid*.

D. RHODOPTERYGIUM, *Rehb. f.*—This species is something in the way of *D. Parishii*; the stems, however, are much longer, and more erect. The flowers are pink tinged with rose, and instead of two blotches have on each side the base half a dozen streaks of purple, while the disk is covered with little warts instead of the velvety hairs so conspicuous in *D. Parishii*.—*Burmah*.

D. RHODOSTOMA, *Rehb. f.*—One of Messrs. Veitch's hybrids, produced between *D. superbum* *Huttoni* and *D. sanguinolentum*. In growth it resembles *D. MacCarthiae*. The flowers are white, the sepals and petals as well as the lip tipped with bright rosy-magenta. It blooms in September. We saw this plant flowering freely in the collection of W. Lee, Esq., Downside, Lenthershead.—*Garden hybrid*.

D. RHOMBEUM.—See *D. AUREUM*.

D. ROLFEAE, *Kränzlin*.—"The flowers of this new hybrid have the usual shape of those of *D. nobile*, including its lip and broad petals; the sepals are of a delicate blush colour, white at the base, and light blush-pink at the apex. The petals are white, tipped with rosy-pink; the lip sulphur-yellow and white, tipped with bright rose; the fleshy disk is blush-white, with numerous maroon radiating lines, some broad, others very narrow, on either side, but no maroon blotch in front. The column is bright pea-green, with the anther-case light rosy-purple. Thus it partakes very largely of the pollen parent, and has large, well formed, delicately coloured flowers, over $2\frac{1}{4}$ inches in diameter from tip to tip of petals; petals and lip over 10 lines broad. The influence of *D. nobile* is very marked in the free growth and blooming character of the plant. It is one of the most charming of the many *Dendrobies* yet raised, and is dedicated by the raisers, Messrs. F. Sander & Co. of St. Albans, to the wife of our British Orchidist, Mr. R. A. Rolfe, of Kew" (*Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 522).—*Garden hybrid*.

D. "RUBENS," *O'Brien*.—This hybrid was raised between *D. Leechianum* and *D. nobile nobiliss* by Mr. J. Cypher, of Cheltenham, and is named in honour of the Flemish Painter P. P. Rubens. "The sepals are broad and flat, $3\frac{1}{2}$ inches across, white, tinged with the peculiar purplish-crimson of *D. nobile nobiliss* on the outer halves and reverse side; petals nearly 4 inches across and 1 inch in width, white, with a purplish-crimson margin, and heavier colouring of a more purple-rose hue at the tips. The lip is less acuminate at the tip than in *D. Leechianum*; blush white at the base, and with purple lines over the sides which clip the column, the middle of the lip for nearly half its area being of the richest maroon-crimson, which is encircled by a broad white band, the tip being of purplish-rose colour, like the tips of the other segments. Compared with *D. Leechianum*, it has the shining white and bright colour of *D. nobile nobiliss*, instead of the creamy-white and duller colour of that variety, and the colouring of the lip is full, the margin of the blotch only being a little broken, and not displayed in veining as in the varieties of *D. Ainsworthii*. In growth and freeness of habit it resembles *D. splendidissimum grandiflorum*" (J. O'Brien, in *Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 226).—*Garden hybrid*.

D. SANGUINEUM.—See *BROUGHTONIA SANGUINEA*.

D. SANGUINOLENTUM, *Lindley*.—A distinct and delicately beautiful ever-green species, having terete pendulous stems, which are of a delicate purple when

young, and terminate in a few ovate-lanceolate leaves, which are also purplish beneath. It grows to the length of 3 or 4 feet, and blooms from the end of the old stems, which continue flowering for years; the flowers grow in pairs, and are crowded together so as to form a close bunch; the sepals and petals are pale fawn tipped with deep violet, and the lip is of the same colours. It blooms during the summer and autumn months, and lasts two weeks in good condition. This will do either in a basket or pot, with peat or moss.—*Ceylon*.

FIG.—*Bot. Reg.*, 1843, t. 6.

D. SANGUINOLENTUM SUPERBUM, *Hort.*—This plant is a great improvement on the type, handsome as that is. The variety is much stronger in growth, producing longer spikes of very much larger flowers, which are of a creamy-white tipped with dark rich purple. This variety was sent to us a few years ago with a consignment of *Phalaenopsis*.—*Borneo*.

D. SCABRILINGUE, *Lindley*.—A beautiful sweet-scented Orchid of remarkably easy culture, producing its blossoms in spring. The stems are erect, a span high, and somewhat clavate, with ligulate-oblong unequally emarginate leaves, and numerous flowers produced laterally in pairs on both leafy and leafless stems; when they first open the flowers have been noted to be green or greenish-white, but after a day or so they change to pure white, except the lip, which has the acute erect side lobes green streaked with purple, and the much longer recurved front lobe yellow with deep orange furrows along the disk, and striped with crimson. They yield a delicious perfume similar to that of Wallflowers. It belongs to the *D. formosum* section, in which the leaf-sheaths of the young growths are covered with black hairs.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5515; *Bateman, Second Cent. Orch. Pl.*, t. 155.

SYN.—*D. hedyosmum*.

D. SCHNEIDERIANUM, *Reichb. f.*—This is the result of a cross between *D. Finlayyanum* and *D. aureum*. The seed was grown in the collection of Oscar Schneider, Esq., of Fallowfield, Manchester, the plants from which were raised by Mr. Holmes, gardener to C. Moseley, Esq., of Grangethorpe, Manchester. The flowers are large and showy, mostly produced in pairs on long pedicels; sepals and petals creamy-white tipped with rosy-purple; the lip is acuminate with a rosy-purple point, behind which is a white zone; the base of the lip is downy, rich orange-yellow with numerous veins and streaks of orange or purple.—*Garden hybrid*.

FIG.—*Orchid Album*, ix. t. 411.

D. SCHRÖDERI, *Williams*.—A handsome kind, sometimes called Schröder's variety of *D. densiflorum*. It grows to the same height as *D. Farneri*, which it somewhat resembles in appearance, and has foliage of the same colour. The sepals and petals are white tinged with pale pink, and the lip is bright yellow with a strong orange tint at the base. It blossoms in April and May, and continues about ten days in perfection. It grows best in a pot in peat. This is one of the finest of the *Dendrobies*; and is still rare. It can be easily distinguished from any other kind by its stems.—*India*.

FIG.—*Floral Mag.*, t. 502.

SYN.—*D. densiflorum Schröderi*.

D. SCULPTUM, *Rehb. f.*—A charming species, in habit somewhat resembling *D. formosum*, but the stems are shorter and not quite so stout. The leaves are oblong acute, slightly downy. The flowers are produced from the top of the matured bulbs, and average from four to five in a raceme; the sepals and petals are pure white, and the obovate emarginate lip of the same colour, with a distinct orange blotch in the centre, the base of the lip being marked on each side by numerous minute transverse rugae. These flowers measure about 2 inches across, and, although not so large as in *D. formosum*, will be found more valuable for cutting. It blooms at various times of the year, and lasts a good while in perfection.—*Borneo*.

FIG.—*Xenia Orch.*, ii. t. 146.

D. SENILE, *Parish.*—One of the most curious of Orchids, quite dwarf in habit, the stems fusiform, 6 inches long, covered as are the two or three leathery obovate leaves with short white hairs. The flowers are of a bright yellow colour, the three-lobed lip having besides a green blotch on each side of the disk, which is deep orange; they are abundantly produced in pairs, and continue in full beauty for a considerable time.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5520; *Xenia Orch.*, ii. t. 155; *Bateman, Second Cent. Orch. Pl.*, t. 147.

D. SMILLIAE, *von Müller.*—This beautiful *Dendrobe* is described by the late Professor Reichenbach in the *Gardeners' Chronicle*, N.S., 1886, xxvi. p. 552, as follows:—"The buds stand all transverse, nearly rectangular on the main axis. Their rose peduncles and stalked ovaries, chins, and bases of sepals, make a neat contrast with the light green of the other parts of the sepals; the open flowers are bent down, and form a light green mass, embellished by the dark tips of the sepals and petals, and the much darker calceolar apices of the lips." A splendid spike was received by us from W. E. Brymer, Esq., of Dorchester, from which the above description was drawn up. It contained over a hundred large flowers, and measured 4 inches high, and 2½ inches broad.—*Queensland*.

D. SPECIOSUM, *Smith.*—A very old species which flowered in the Liverpool Botanic Garden as long ago as 1831. The flowers are small and do not expand fully, for which reason it has never found much favour in the eyes of Orchidists. It produces large dense many-flowered spikes of yellowish-white fragrant flowers.—*Eastern Australia*.

FIG.—*Bot. Mag.*, t. 3074; *Bot. Reg.*, t. 1610.

D. SPECIOSUM BANCROFTIANUM, *Rehb. f.*—This variety was introduced by Dr. Bancroft. It has more slender flowers than the preceding, and the lip is paler.—*Australia*.

D. SPECIOSUM HILLII, *Hook.*—A bold-habited and rather striking variety, but the stems, which are stout terete and many ribbed, are fully twice as long as those of *D. speciosum*, surmounted by four to six elliptic or oblong thick leathery dark green leaves, and the terminal racemes of flowers are much longer and more graceful; the long narrow sepals and petals are narrower and of a creamy-white,

while the small lip is transversely blotched with purple. It is a free-flowering and desirable variety, and succeeds well in the cool house after its growth is complete.—*Queensland*.

FIG.—*Bot. Mag.*, t. 5261 (*D. Hillii*): *Gard. Chron.* N.S., 1877, vii. p. 112; *Orchid Album*, v. t. 193; *Veitch's Man. Orch. Pl.*, iii. p. 74.

SYN.—*D. Hillii*.

D. SPLENDIDISSIMUM, *Rehb. f.*—A handsome hybrid, raised in Messrs. Veitch's establishment at Chelsea. It is a cross between *D. nobile* and *D. aureum*, and in growth most resembles the first-named parent. The sepals and petals are white faintly tinged with rose, and the lip is white, having a faint tinge of yellow in it, and a rich deep purple blotch in the centre. It flowers in January and February. *D. Ainsworthii* and *D. Leechianum* have the same parentage.—*Garden hybrid*.

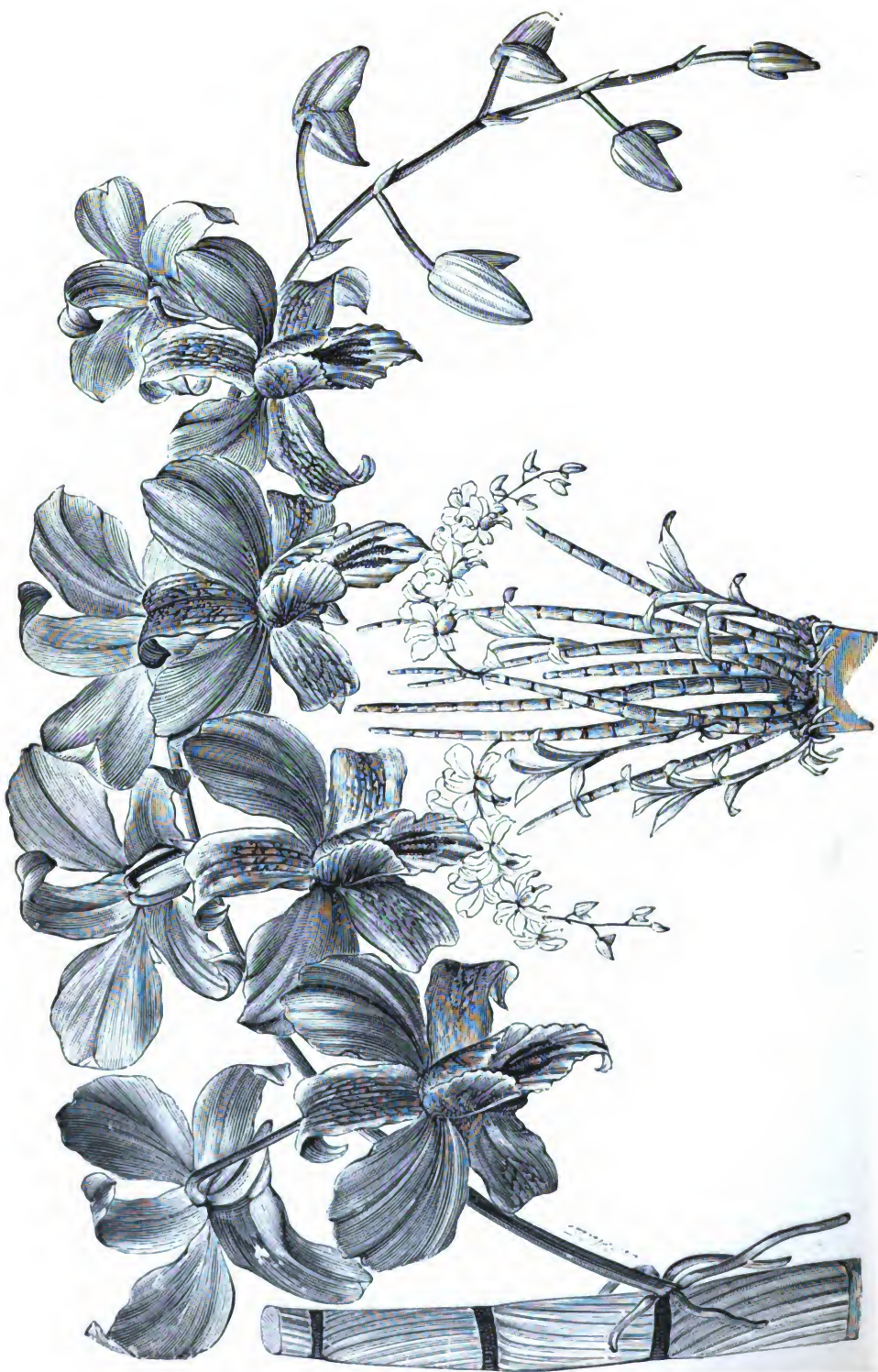
D. SPLENDIDISSIMUM GRANDIFLORUM, *Hort. Veitch*.—The flowers of this variety are much larger than the preceding, the disk of the lip being unusually large and of a rich Indian-purple colour, with a pale yellow margin and rosy-purple apex.

FIG.—*Veitch's Man. Orch. Pl.*, iii. p. 91.

D. STRATIOTES, *Rehb. f.*—An interesting and handsome species, which is described by the late Professor Reichenbach as follows:—"This highly curious and marvellous *Dendrobe* bears a raceme of rather large flowers, surpassing those of *D. taurinum*; the dorsal sepal is ligulate, acute, and twisted, as also are the lateral sepals, which have an extinguisher-shaped chin; sepals linear acuminate, twisted, surpassing the petals in size, lip tri-fid, side-laciniae rhombic, with lateral partly rough veins, and three keels in the mid-line between them, the lateral ones angular in front of the base of the mid-lacinia, mid-lacinia elliptic, acute, without an isthmus; column with a right-angle on each side at the top. I had a very good inflorescence sent me in spirits. The colour appears to have been white and purple. It comes from the Sondaic Archipelago, having been discovered by the Lindenian collectors, and was kindly sent me by Director Lucien Linden" (*Gardeners' Chronicle*, N.S., 1886, xxv. p. 266).—*Malay Archipelago*.

FIG.—*Lindenia*, i. t. 43; *L'Orchidophile*, 1886, p. 264 (plate); *L'Ill. Hort.*, xxxiii. t. 602; *Gard. Chron.*, N.S., 1886, xxvi. p. 177, f. 34; *Journ. of Hort.*, 1888, xvi., p. 61, f. 9.

D. STREBLOCERAS, *Rehb. f.*—This species was introduced with *D. stratiotes* by Mr. Linden. "The flowers are smaller than those of *D. stratiotes*, like those of *D. antennatum*; the sepals and petals are as in *D. stratiotes*, chin narrower, side laciniae nearly square, obtuse angled, isthmus well developed; anterior lacinia nearly triangular, basilar angles blunt; there are five keels over the median area of the lip, median one most obscure, ceasing in an angular elevation in front of the apex of the lip; the side keels are adorned with two undulations, and cease higher up in the disk of the mid-lacinia; the outer keels run out into an angulus at each side of the isthmus; there are two small lamellar auriculæ on each side in front of the base; column blunt on each side of anther" (H. G. Reichenbach, in *Gardeners' Chronicle*, N.S., 1886, xxv. p. 266).—*Sunda Islands, Malay Archipelago*.



DENDROBIUM SUPERBIENS.

D. STREBLOCERAS ROSSIANUM, *Linden et Rodigas*.—A beautiful variety with white flowers. Appeared in the collection of the Horticulture Internationale. It has been named in honour of H. J. Ross, Esq., of Castagnole, Italy.—*Sunda Islands, Malay Archipelago*.

FIG.—*Lindenia*, iii. t. 124.

D. SUAVISSIMUM, *Rehb. f.*—A handsome compact-growing species, resembling *D. chrysotoxum* in habit. The stems are short, stout, fusiform, deeply furrowed clustered, about three-leaved, the leaves oblong acute. The flowers, which exhale a delicious perfume, are produced in gracefully drooping racemes, the individual blossoms being long-stalked, 3 inches across, and of a rich golden-yellow colour, having on the crisulate fringed lip a large sanguineous purple central reniform blotch, with a few crimson bars on each side behind it. It is very free-blooming, and we have seen three spikes on a single stem. It blooms during May and June, and lasts two or three weeks in full beauty. This is a grand plant for exhibition purposes, as its bright yellow flowers form a striking contrast when exhibited amongst other Orchids.—*Upper Burmah*.

FIG.—*Xenia Orch.*, iii. t. 202; *The Garden*, 1873, p. 166, t. 116; *Orchid Album*, i. t. 13.

D. SUPERBIENS, *Rehb. f.*—This magnificent species is undoubtedly one of the most charming of all the *Dendrobes*. It is a most profuse bloomer, and as a proof of its free-flowering quality, we may here state that since we imported the plants in 1877, they have never been without flowers. This *Dendrobe* has the peculiarity of blooming from the old stems at the same time as from the new ones, and frequently repeats this freak of nature for several years in succession, so much so that we have counted as many as fifteen old spikes on a stem. In addition to this it flowers in a very young state, when the stems are scarcely 6 inches high. These stems when fully grown are from 2 to 3 feet high, and about 3 inches in circumference, furnished with thick oblong acute leaves. The flowers are produced from fifteen to twenty-five at a time in long racemes, the sepals being dark purple, beautifully reticulated, and having a whitish border, the petals of a beautiful warm purple, longer than the sepals, and the lip a warm purple, with five keels on the disk. The flowers last three months in perfection. This plant is best grown in a basket or pan suspended from the roof. It delights in sunshine, and we have grown it most successfully in a stove where *Crotons* and such-like plants were cultivated.—*Torres Straits*.

FIG.—*Floral Mag.*, 2nd ser., t. 294; *Gard. Chron.*, N.S., 1878, ix. p. 49, f. 9; *Reichenbachia*, i. t. 39; *Orchid Album*, vii. t. 312; *Lindenia*, viii. t. 294.

D. SUPERBUM, *Rehb. f.*—A noble and very handsome deciduous species of pendulous habit, losing its ovate-oblong obtuse leaves just as it begins to show its flower-buds. The spreading or drooping stems grow about 2 feet long, and from these the flowers proceed in a row on each side; they are of a pale purplish or lilac-rose colour, each 3 or 4 inches across, and the downy lip is of the same colour with a pair of sanguineous blotches at the base; they last two weeks in perfection if they are kept dry. The flowers have a strong smell of rhubarb, in which respect this plant differs from the closely allied *D. anosmum*,

which bears scentless flowers. It is best grown in a basket, with moss. This plant has been commonly grown under the name of *D. macrophyllum*, which name, however, was previously appropriated to the plant originally known in gardens as *D. Veitchianum*.—*Philippine Islands*.

FIG.—*Flore des Serres*, t. 757; *Bot. Mag.*, t. 3970; *Pasatorea*, t. 40; *Gard. Chron.*, 1845, p. 84, with fig. (habit); *Hook. First Century Orch. Pl.*, t. 12; *Sertum Orch.*, t. 35; *Orchid Album*, i. t. 42.

SYN.—*D. macrophyllum*; *D. macranthum*.

D. SUPERBUM ANOSMUM.—See *D. ANOSMUM*.

D. SUPERBUM GIGANTEUM, *Rehb. f.*—A showy variety which grows in the same way as the preceding, and blossoms about the same time. The flowers are from 5 to 7 inches across; the sepals and petals a beautiful rose-purple; the lip of the same colour, fringed and marked at the base with a pair of rich purplish-red spots; they remain about two weeks in perfection. A fine plant for exhibition, but it requires to be kept in a cool house to keep it back for that purpose, as it generally blooms very early.—*Philippine Islands*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 26.

D. SUPERBUM HUTTONI, *Rehb. f.*—This exceedingly rare and beautiful variety has pure white sepals and petals, whilst the lip is of the colour of the normal form, saving a marginal border of white. The rhubarb scent is not so decided as in the type. It requires the temperature of the East Indian house.—*Malay Archipelago*.

SYN.—*D. Huttoni*.

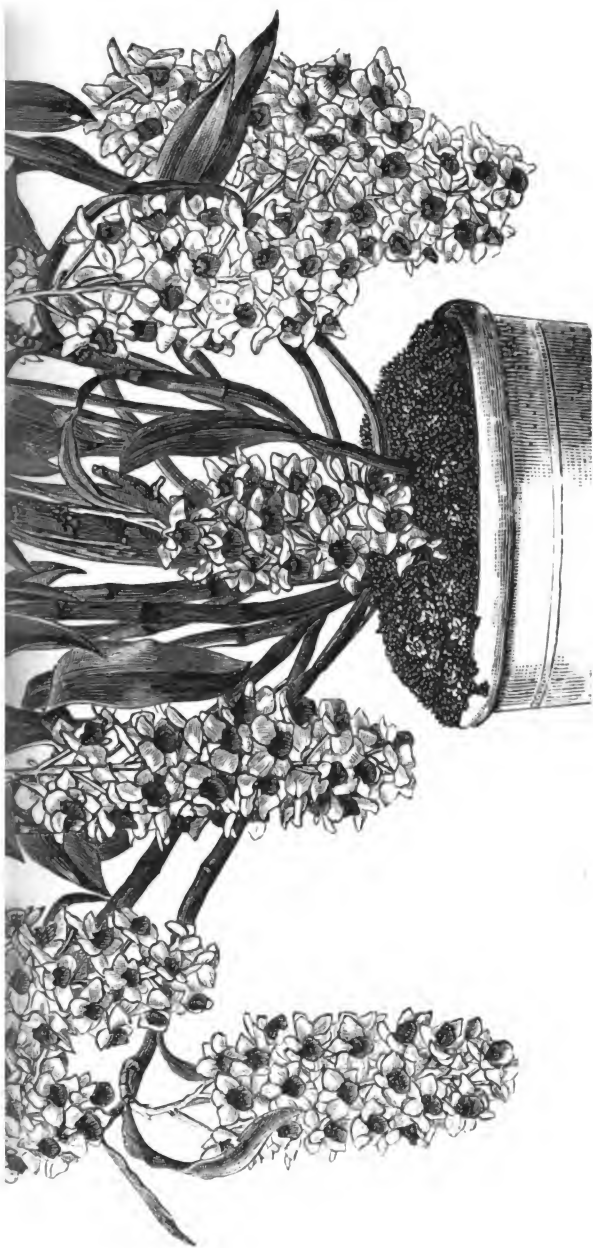
D. TATTONIANUM.—See *D. CANALICULATUM*.

D. TAURINUM, *Lindl.*—A most remarkable and distinct species named *D. taurinum*, or the bull-headed *Dendrobe*, from the strong suggestion of a bull's head with long straight horns made by the curiously constructed flowers. It is a strong-growing plant, with erect terete stems, often attaining a height of 5 feet. The leaves are very broad, oblong, unequally emarginate; and the flowers grow in an oblong raceme, crowning a long erect terminal peduncle; the sepals are yellowish-green, rolled back at the points; the petals very long, erect, twisted, deep purple; and the oblong lip whitish, crispy, purplish-violet at the apex, and having three elevated lines along the centre. It is best grown in a pot in peat. We seldom see good plants of this species under cultivation.—*Philippine Islands: Manilla*.

FIG.—*Bot. Reg.*, 1843, t. 28; *Flore des Serres*, t. 1904; *Parton, Mag. Bot.*, x. p. 217, with tab.

D. TERETIFOLIUM, *R. Br.*—A curious-looking species, very distinct in habit, which is worth growing on account of the profusion of flowers it produces in the winter months. The stems are clustered, dark brown, branched, each branch terminating in a long pendent curved terete taper-pointed hard fleshy leaf, very much resembling that of a *Scuticaria*; the flowers are produced in lateral dichotomously-branched panicles from the branch of the stem; the sepals and petals





DENDROBIUM THYRSIFLORUM.

(From the *Gardener's Chronicle*.)

are both linear-filiform and white, the latter being longer than the former, and the lip, which bears three wavy lamellae, is much crisped, and strongly reflexed, white with a few dots of crimson.—*North-East Australia*.

FIG.—*Bot. Mag.*, t. 4711; *Endl. Icon.*, t. 99.

SYN.—*D. calamiforme*.

D. "THE PEARL," *Hort. Lawrence*.—A hybrid, of unknown parentage, raised by Sir Trevor Lawrence, Bart. The sepals and petals are pure white with rosy tips; lip white tipped also with rose, and the throat of the deepest magenta-purple.—*Garden hybrid*.

D. THYRSIFLORUM, *Hort*.—A fine showy species, in habit like *D. densiflorum*, but stronger, with the apex of the stems yellowish, and producing splendid clusters of white flowers with a golden orange lip. There have been some large importations of late, and in many cases very fine varieties have been obtained, varying both in the colour of the flowers and the size of spike. This is one of the handsomest of *Dendrobes*, and is most suitable for exhibition purposes, its fine drooping racemes producing a charming effect when placed beside other Orchids.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5780; *L'Ill. Hort.*, 3rd ser., t. 207; *Gartenflora*, t. 1021; *Floral Mag.*, 2nd ser., t. 449; *Gard. Chron.*, n.s., vii. p. 653, f. 105; *Id.*, xv. p. 463, f. 87 (specimen plants); *Revue Hort. Belge*, 1889, p. 204, t. 17; *Lindenia*, i. t. 46; *The Garden*, 1886, xxx. p. 544; *Veitch's Man. Orch. Pl.*, iii. p. 80; *Journ. of Hort.*, 1893, xxvi. p. 419, f. 75

SYN.—*D. densiflorum albo-luteum*.

D. THYRSIFLORUM WALKERIANUM, *Williams*.—This is the finest variety we have yet seen. The stems are 3 feet in height, and the racemes of flowers 2 feet long, bearing more than fifty flowers on one raceme; the blossoms are very large, and of the same colour as those of *D. thysiflorum*. This is named in honour of C. Walker, Esq., Brettargh Holt, Westmoreland.—*Moulmein*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 21.

SYN.—*D. densiflorum Walkerianum*.

D. TORTILE, *Lindley*.—A rather pretty dwarf species, with erect clavate furrowed stems a span high, few linear retuse leaves confined to the young shoots, and lateral two-flowered peduncles on the leafless stems. The flowers are large and rather handsome, the sepals and petals white just tinged with purplish-rose, waved and spirally twisted, and the large conchiform pubescent lip is lemon-yellow streaked with purple at the base. It flowers in May and June, lasting a long time in perfection. It blossoms in the same way as *D. nobile*, and requires the same treatment.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 4477; *Gard. Chron.*, 1847, p. 797, with fig.

D. TORTILE ROSEUM, *Hort*.—A beautiful variety of the preceding species, resembling it in every respect, saving the colour of its flowers, which are in this plant a delicate rose shaded with yellow. A very desirable variety; blooms in May and June.—*Java*.

D. TRANSPARENS, *Wallich*.—A pretty small-flowering Orchid, which blooms in the same way as *D. nobile*. The stems are erect, terete, about a foot long, the young ones bearing linear-lanceolate leaves; the flowers, which grow in pairs

along the stems, are of a pale transparent pinkish-lilac, and the obovate-oblong ciliolate lip has a large deep blood-coloured blotch passing into striae at the edges. It blooms in May and June, and does well grown in a pot with peat or moss.—*India*.

FIG.—*Bot. Mag.*, t. 4663; *Parton Fl. Gard.*, i. t. 27; *Linn. Jard. Fl.*, t. 63; *Orchid Album*, ix. t. 396; *Journ. of Hort.*, 1892, xxv. p. 73, f. 10 (*Souvenir d'Alep*).

SYN.—*D. Henshallii*.

D. TRANSPARENS ALBUM, *Rolfe*.—A beautiful pure white variety has appeared in the collection of Hamar Bass, Esq., of Burton-on-Trent. The flowers do not show "the slightest trace of colour anywhere."

D. TREACHERIANUM, *Rehb. f.*—A very distinct and beautiful species, with small, oblong-acute, compressed somewhat quadrangular pseudobulbs, 1 to 1½ inch long, furnished with brown scales, and bearing each two small oblong-lanceolate leaves, 2½ to 3 inches long; spikes produced from apex of bulbs, erect, four- to six-flowered; flowers 2 to 2½ inches in diameter; sepals broader than the petals, vinous-purple in colour, paler towards the edges; petals same colour; lip deep reddish-purple around the column, paler towards the apex; scented like cocoanut. Flowers in January and February. A plant was flowered by W. E. Brymer, Esq., of Dorchester. It was named in honour of W. H. Treacher, the Colonial Secretary of Labuan.—*Borneo*.

FIG.—*Bot. Mag.*, t. 6591; *Orchid Album*, vi. t. 288.

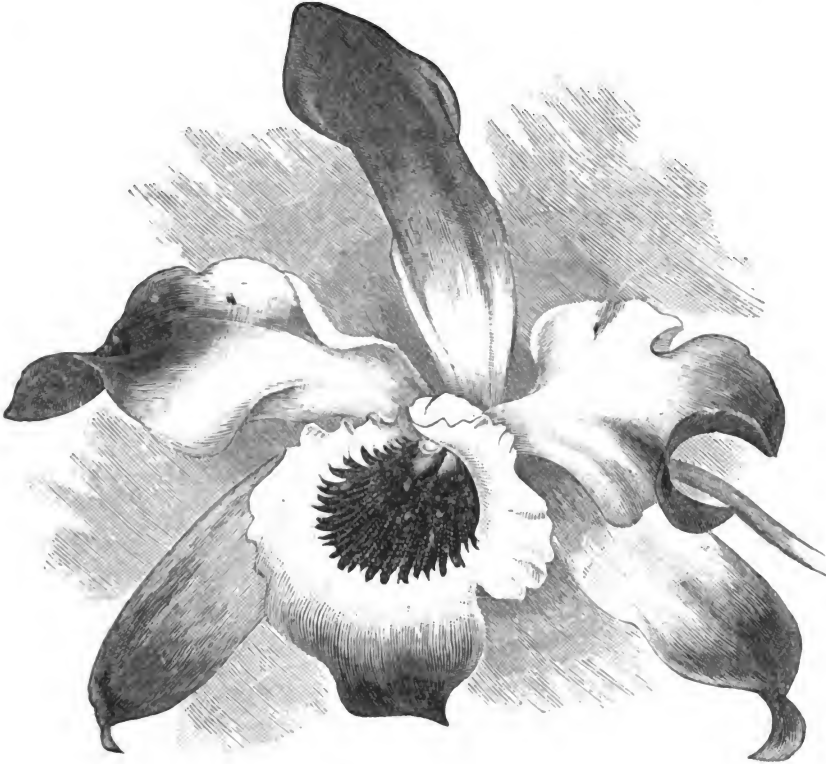
D. TRIADENIUM.—See *D. MUTABILE*.

D. VANNERIANUM, *Rehb. f.*—This is a cross between *D. moniliforme* and *D. Falconeri*, raised by W. Vanner, Esq., of Chislehurst. "The flowers remind me of *D. transparens*. Sepals lanceolate with thin purple margin; petals oblong-acuminate white, with the apicular part of fine purple; lip most distinctly rhombic; ground colour white, apicular and basilar part purple, disk light sulphur-coloured and with a very fine great dark purple dash in the middle of the upper part, running out by a dark purple line to the base" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 72).—*Garden hybrid*.

D. VEITCHIANUM.—See *D. MACROPHYLLUM*.

D. VENUS, *Rolfe*.—A beautiful hybrid raised by Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne. It is the result of a cross between *D. Falconeri* and *D. nobile*. "The raceme is two-flowered; the sepals lanceolate, acute, bright rose above, much paler below, 2¼ inches long by ¾ inch broad; the petals are much broader, acute, white, tipped with bright rose, and with a large deep maroon blotch. Thus the flowers have much of the general appearance of *D. Falconeri*, except that the yellow is absent from the lip. They are large and very showy, and as the plant has now only flowered for the first time, it should develop into a good thing. The leaf sent is narrowly lanceolate-linear, 3½ inches long by ¾ inch broad. Mr. Cookson remarks that the pseudobulbs are almost intermediate between the parents, being semi-pendulous, and the nodes not nearly so much swollen in *D. Falconeri*, with which it also agrees in its habit of producing new

pseudobulbs from the summits of the old ones. It is also said to be a robust grower. The most obvious character derived from *D. nobile* is the absence of



DENDROBIUM VENUS.

(From the *Journal of Horticulture*.)

the yellow disk of the lip" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, vii. p. 608).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxii. p. 321, f. 59 ; *Reichenbachia*, 2nd ser., ii. t. 50.

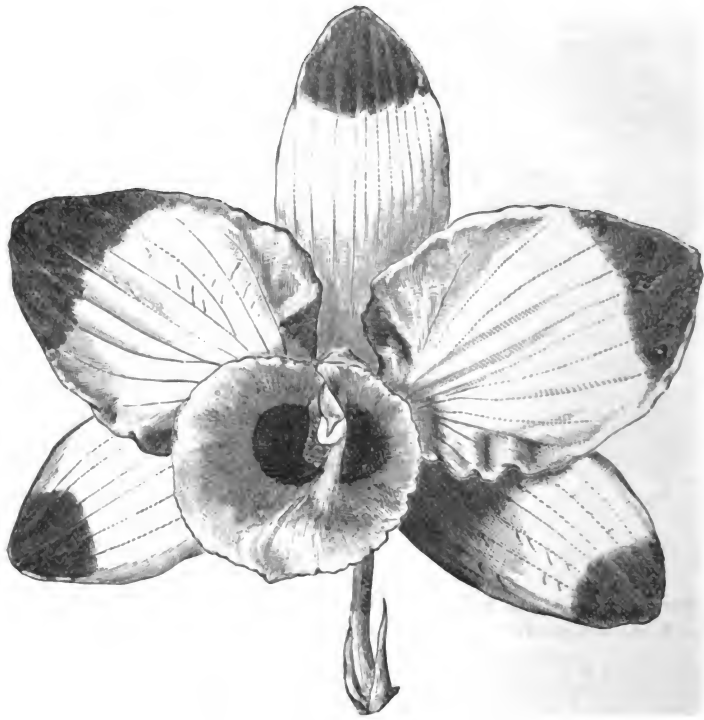
D. VIRGINEUM, *Rehb. f.*—This is said to be a lovely thing in the way of *D. infundibulum*, with nigro-hirsute stems, the leaves oblong-ligulate bi-lobed at the apex, and nearly twice as broad as those of that species. The flowers, which are numerous, and grow in terminal racemes, are only two-thirds the size of those of *D. infundibulum*; they are ivory white, greenish on the chin behind, and marked from the base of the three-lobed lip to the base of the roundish emarginate crenulate middle lobe by two singular thickened light reddish lines, and having also a reddish tint at the base of the column. Flowers during autumn.—*Burmah*.

D. WALLICHII.—See *D. NOBILE WALLICHIANUM*.

D. WALTONI, *Rehb. f.*—A supposed hybrid between *D. Wardianum* and *D. crassinode*, having the growth of the latter species. Flowers intermediate between those of the two parents, the lip having the two dark brown eye-like spots peculiar to *D. Wardianum*.

D. WARDIANO-AUREA.—See *D. ASPASIA*.

D. WARDIANUM, *Warner*.—A magnificent species, one of the finest in cultivation, and a splendid match for the beautiful *D. Falconeri*, which it somewhat resembles in its thickened and knotted stem, than which, however, it is much stouter, and also easier of cultivation. The stems are stout, terete, somewhat thickened at the nodes, pendulous, from 2 to 3 feet long, the younger ones



DENDROBIUM WARDIANUM.

(From the *Gardening World*.)

furnished with oblong-lanceolate acute leaves, which fall away, after which the flowers are produced in twos or threes, each flower measuring upwards of $3\frac{1}{2}$ inches in diameter. The colour of the sepals and petals is white tipped with magenta; the great cucullate lip having the same colours and in addition a large rich orange blotch on the convolute base and disk; the throat spotted on each side with deep crimson. It blooms about May, and continues a considerable time in perfection. It is found to thrive best suspended in a basket, or on a block.

This fine plant was first flowered by T. Ward, Esq., of Southampton, after whom it is named.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 19; *L'III. Hort.*, 3rd ser., t. 277; *Jennings' Orch.*, t. 2; *Gard. Chron.*, N.S., viii. p. 240, f. 50 (specimen plant); *Id.*, 3rd ser., 1888, iv. p. 9. f. 1; *Journ. of Hort.*, 1890, xxi. p. 8, f. 4; *Reichenbachia*, i. t. 9; *Veitch's Man. Orch. Pl.* iii. p. 83; *Gardening World*, v. p. 517

D. WARDIANUM ALBUM, *Williams*.—A fine white-flowered variety of this noble species, which first flowered in the collection of E. G. Wrigley, Esq., Broadoaks, Bury, Lancashire. It is very rare, and was a chance plant amongst a large consignment of Orchids from Assam.

FIG.—*Orchid Album*, x. t. 450.

SYN.—*D. Wardianum candidum*.

D. WARDIANUM CANDIDUM.—See *D. WARDIANUM ALBUM*.

D. WARDIANUM GIGANTEUM, *Williams et Moore*.—A magnificent variety of this grand Orchid, altogether stouter in all its parts than the type, as first introduced. It sometimes produces growths as much as 5 feet in length and of great thickness, and is altogether more vigorous in its habit as well as more erect in its mode of growth than the original *D. Wardianum*. The flowers are of the same colours, and similarly marked, but larger, and of stouter substance. It blooms during the winter and spring months.—*Burmah*.

FIG.—*Orchid Album*, iii. t. 113; *Floral Mag.*, 2nd ser., t. 212; *Lindenia*, v. t. 225 (*D. Wardianum Lowii*).

SYN.—*D. Wardianum Lowii*.

D. WARDIANUM LOWII.—See *D. WARDIANUM GIGANTEUM*.

D. WILLIAMSIANUM, *Rehb. f.*—A very beautiful and distinct species, which was introduced through our collector, Mr. Andrew Goldie, and dedicated by the late Professor Reichenbach to the late Mr. B. S. Williams. The stems are terete, about $1\frac{1}{2}$ foot high; leaves persistent, oblong, blunt, and obliquely emarginate, about 2 inches long or more, palish green; the flowers are large, measuring over 2 inches across, and produced on slender nodding spikes; sepals and petals white, flushed with pale mauve on the outer surface; lip scoop-shaped with deep mauve crests at the lower part, paler towards the margins. Flowers in July, and lasts many weeks in perfection.—*New Guinea*.



DENDROBIUM WILLIAMSIANUM.
(From the *Gardeners' Chronicle*.)

FIG.—*Gard. Chron.*, N.S., 1836, xxvi. p. 173, f. 32; *Orchid Album*, vi. t. 252.

D. WILLIAMSONI, *Day et Rehb. f.*—A distinct and pretty species, with erect fusiform stems, velvety with black hairs, the younger ones bearing numerous oblong-ligulate unequally bi-lobed leaves, which are also velvety with short soft hairs. The flowers are large, ivory-white; the sepals slightly tinged with brown on the outer surface, the lip bearing a large three-lobed blood-red spot on the disk. This plant belongs to the nigro-hirsute section of this genus, and is somewhat difficult to establish.—*Assam*.

D. XANTHOPHLEBIUM, *Lindl.*—A very pretty species with erect terete angled stems about 1 foot long, and rather thicker than a swan's quill. The leaves, produced on the young stems only, are linear-lanceolate and obliquely emarginate. The flowers grow from the joints of the older leafless stems, generally in pairs, the sepals and petals being pure white, and the lip three-lobed, the side lobes large, erect, veined with deep orange, the front lobe also roundish, but much undulated, downy, orange-yellow bordered with white as in the lateral lobes. The spur is as long as the chin. This plant has been identified with the *D. marginatum* of Bateman in *Botanical Magazine* quoted below, a name given some years later than that here adopted.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5454; *Bateman's Second Cent. Orch. Pl.*, t. 105.

SYN.—*D. marginatum*.

DENDROCHILUM.—See PLATYCLINIS.

DIACRIUM.—See EPIDENDRUM BICORNUTUM.

DIPODIUM.

(Tribe Vandeeae, subtribe Cymbidieae.)

A small genus of terrestrial Orchids, the species of which have been divided by Reichenbach into two sections, one containing a few leafless species, the other consisting of species with leaves, to which the plant described below belongs; they have branching roots and stems, the latter attaining to some two feet in height; these are furnished in the leafless species, at short intervals, with brown scarious scales, and bearing on the apex a large raceme of nearly regular flowers; the lip is oblong and clawed, two-eared at the base, bearded at the point; the pollen masses are two in number, each having a separate strap-like appendage, from which it derives its generic title—two-footed; they are natives of Australia and New Caledonia.

Culture.—Dipodiums should be placed in small well-drained pots, using a mixture of peat and sphagnum moss. They require a moist and close atmosphere, but in winter less moisture will suffice.

D. PALUDOSUM, *Rehb. f.*—The only species of the genus in cultivation. It is an erect growing plant with two ranked leaves, which are ligulate, acute, and membranous in texture, pale green, or with just a tinge of bluish-metallic green; scape axillary, erect, bearing a raceme of six to twelve flowers, which measure about $1\frac{1}{2}$ inch across, and are of a soft creamy-white, dotted with purplish-magenta; sepals and petals sub-equal, oblong-lanceolate, somewhat fleshy in texture; lip cuneate-oblong, slightly thickened towards the base, where it is ornamented with two prominent teeth, white streaked and blotched with purple.—*Malacca, Borneo, Cochinchina.*



FIG.—*Griffith Ic. Pl. Asiat.*, iii. t. 323; *Orchid Album*, ix. t. 422.

SYN.—*Grammatophyllum paludosum*. *Wailenia paludosa*.

DIPODIUM PALUDOSUM.

DISA, *Berg.*

(Tribe Ophrydeae, subtribe Satyriaceae.)

This is a fine and numerous tribe of terrestrial Orchids, which appear to be peculiar to Africa and some of its islands, being found in various parts of South Africa, in Abyssinia, Madagascar, &c., *D. grandiflora*, the pride of Table Mountain, being not only the finest species hitherto found in South Africa, but it is, at the present time, the grandest and most showy terrestrial species we know in the whole world. These plants are distinguished by having their stems clothed with numerous lanceolate, sheathing leaves, and terminated by a spike of usually showy blooms; but even when the flowers are not brilliantly coloured, they are exceedingly curious and interesting, well deserving the attention of all cultivators of these plants. The sepals are much larger than the petals, the dorsal one erect, hooded and furnished with a spur; the petals are small, and the lip is small and linear acute, projecting forwards; column broad.

Those we here describe are the finest of the species. There are others in cultivation, but as they have not yet flowered, it is impossible

to determine which they really are. Nearly the whole of the species are well worth growing, for although their flowers are not so large as those of *D. grandiflora*, they are very handsome and of easy culture. The following, some of which we have seen growing, though not flowering, are well worthy of attention :—*D. cernua*, flowers green and yellow ; *D. chrysostachya*, golden yellow ; *D. Draconis*, white and dark blue ; *D. longicornis*, blue ; *D. maculata*, spotted blue ; *D. melaleuca*, brown and white ; *D. patens*, yellow ; *D. prasinata*, green and reddish purple ; *D. rufescens*, purple ; *D. spathulata*, pale blue ; *D. tenuifolia*, yellow. Many more might be named, but enough has been said to show that we have a rich stock of novelties in store yet.

Culture.—These plants have been somewhat untractable in the hands of the cultivator, but this, we think, is more to be attributed to the wrong treatment which has been meted out to them, because, where they have been subjected to rational usages, they have invariably done well, but the best that we have ever seen was when on a visit to M. le Comte Adrien de Germigny in France, under the management of Mr. Vincent, who treats them as ordinary geraniums. The best mode of treatment for these plants is to pot them in shallow pans, in some good fibrous peat in a rather rough state, with a little silver sand, well-rotten manure, and live sphagnum moss added to it. They require a liberal supply of water during the growing and flowering season. The plants will start growing in the winter, when they should be kept moist and be placed on a cool bottom. During the time they are making vigorous growth, they may be syringed twice a day, or even oftener. This is far better than using a watering pot, as it serves the purpose of a shower of rain, and helps to keep the red spider from the leaves—an insect which is very injurious to them. Green fly is also very troublesome ; it should be kept under by washing them with a sponge and cold water. The plants rest after the flowering season is over, and during this time less moisture is required. It is a good plan, after this growing and flowering season is past, to place the plants in rather a shady part of the garden and syringe them occasionally, but not to keep them too moist, as they may probably perish if allowed to get dry at any time. The most suitable time for potting them is just as they are beginning to make roots, which is usually in the months of January and February.

These plants are easily propagated, as they throw up suckers in abundance. These should be left till well rooted, and then be taken off and potted in the material recommended above for established plants; after which they must be kept moist, and in the shade, until they make fresh roots. When they become established, place them near the light, and apply more water to the roots. What they principally require is coolness and moisture at the roots, and a good season of growth during the winter months.

D. BARELLII, *Hort.*—This is a showy and handsome species in the way of *D. grandiflora*. The flowers are orange-scarlet with the lip of a lighter shade of the same colour and marked with crimson veins. It should receive the same treatment as *D. grandiflora*.—*South Africa*.

FIG.—*Floral Mag.*, 2nd ser., t. 104.

D. COOPERI, *Rehb. f.*—A curious and handsome species, producing long spikes 1 to 2 feet in height, bearing numerous flowers of a pale carmine-rose; sepals, petals, and lip small, the long spur being the most conspicuous part of the flower.—*South Africa*.

FIG.—*Gard. Chron.*, 3rd ser., 1892, xii. p. 269, f. 45; *Bot. Mag.*, t. 7256.

D. CORNUTA, *Swartz.*—A curious though not a very showy species. The dorsal sepal is purplish-brown, hooded and spurred, enclosing the petals and lip; lateral sepals yellow, spotted with carmine; petals small pale yellow, folded over the black-purple lip; column with two horn-like processes, one on each side.—*South Africa*.

FIG.—*Bot. Mag.*, t. 4991.

D. CRASSICORNIS, *Lindley.*—A very distinct and handsome species, which was first flowered in the Glasnevin Botanic Gardens in 1879. The stems are robust, leafy, 1 to 2 feet high, the leaves lanceolate much acuminate, and the raceme of flowers terminating the stem about a foot high, bearing eight flowers, which are white spotted with deep purple, the hood conical, ending in a long slender spur. It is an extremely rare species, and flowers in September.—*South Africa*.

FIG.—*Bot. Mag.*, t. 6529.

SYN.—*D. megaceras* (Hook., f!.)



DISA GRAMINIFOLIA.

D. GRAMINIFOLIA, *Banks.*—One of the few Orchids with blue flowers. It is herbaceous, tuberous-rooted; leaves cylindrical and slender like a thread,

few and deep green, these do not appear until after the flowers are past, scape erect, with numerous acute sheathing bracts, few flowered, but these are of a rich and bright azure-blue; helmet acute, erect, and shortly spurred behind; lateral sepals oblong, obtuse; petals smaller than the sepals; lip oblong, obtuse, toothed at the apex, having several alternate narrow stripes of white, and reddish violet on the disk; column short, tipped with reddish violet.—*Cape of Good Hope*.

FIG.—*Journ. Linn. Soc.*, xix. t. 34; *Orchid Album*, ix. t. 399.

D. GRANDIFLORA, *Linn.*—This fine plant attains the height of 1 foot or 18 inches, bearing on the stems numerous lanceolate acute leaves, and at the top from two to five of its beautiful scarlet flowers, which are 3 to 4 inches in diameter, with the large spreading lateral sepals crimson, and the dorsal one paler on the outside, and within bluish delicately veined with crimson. The blossoms are borne in June and July, and last a very long time in perfection.—*South Africa*.

FIG.—*Bot. Reg.* t. 926; *Bot. Mag.*, t. 4073; *Gard. Chron.*, N.S., 1875, iii. p. 441, f. 90; *Sertum Orch.*, t. 49; *Hook. First Cent. Orch. Pl.*, t. 96; *Lindenia*, vii. t. 308; *Gard. Chron.*, 3rd ser., 1888, iv. p. 665, f. 94; *Id.*, 1891, ix. p. 365, f. 81; *Reichenbachia*, 2nd ser., i. t. 15; *Gard. Mag.*, 1893, p. 562.

SYN.—*D. uniflora*.

D. GRANDIFLORA SUPERBA, *Moore*.—This certainly ranks among the very finest of greenhouse Orchids. It has a creeping underground stem which throws up young shoots of a light green colour; the flower stems grow to the height of 2 to 3 feet, bearing the lanceolate leaves, and at the top part from two to eight flowers, each more than 4 inches in diameter, of a bright scarlet and crimson, veined with pink; the blossoms are generally produced in June, July, and August, and continue in perfection for five or six weeks. It makes a fine plant for exhibition on account of its splendid colour. This plant was well grown by the late Mr. Thomas Speed, at Chatsworth. We remember on one occasion receiving from him a spike which was 2 feet 6 inches in length and bore twelve flowers.—*South Africa*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 36; *Florist and Pom.*, 1863, p. 105, t. 221; *L'Orchidophile*, 1885, p. 277 (plate).

D. INCARNATA, *Lindley*.—An old species which has only lately become known to cultivators. The flowers, which measure about an inch in diameter, are of a beautiful bright cinnabar-orange, except the dorsal sepal, which is deep yellow spotted with bright red.—*Madagascar*.

FIG.—*Gard. Chron.*, 3rd ser., 1892, xi. p. 618, f. 88; *Gard. Mag.*, 1892, p. 157 (woodcut); *Bot. Mag.*, t. 7243.

D. MEGACERAS.—See *D. CRASSICORNIS*.

D. "PREMIER," *Hort. Kew*.—This handsome hybrid was raised in the Royal Gardens at Kew, and is a hybrid between *D. Veitchii* and *D. tripetaloides*. The flowers, which are borne on spikes about 2 feet high, are 1½ inch wide, of a beautiful rosy-magenta. It was exhibited by Sir Trevor Lawrence, Bart., at the Drill Hall, on October 10, 1893.—*Garden hybrid*.



DISA GRANDIFLORA.
(From the *Gardeners' Chronicle*.)

D. RACEMOSA, *Linn.*—A desirable and free-growing species. Leaves four to six, radical, spreading lanceolate acuminate; scape erect, from 1 foot to 18 inches high or even more when vigorous, somewhat flexuose, clothed with numerous bracts, which are sheathing at the base, becoming smaller upwards, and appressed, terminating in a many-flowered secund raceme; the flowers are showy, of a rosy-purple hue, and measure some 3 inches across; dorsal sepal helmet-shaped, acute, erect, gibbous at the back; lateral sepals plain, spreading, oblong acute; petals small, obliquely oblong, incurved at the apex, and arching over the anther, of a deeper hue than the sepals; lip sub-filiforme, acuminate; column erect, or ascending.—*Cape of Good Hope*.

FIG.—*Bot. Mag.*, t. 7021; *Orchid Album*, viii. t. 356; *Gard. Chron.*, 3rd ser., 1887, iii. p. 593, f. 81; *Journ. of Hort.*, 1888, xvii. p. 221, f. 25; *The Garden*, 1891, xxxix. p. 10, t. 786.

D. TRIPETALOIDES, *N. E. Brown.*—A very free-flowering species, requiring the same treatment as *D. grandiflora*. The leaves are arranged in the form of a rosette at the base, and are lanceolate, acuminate, somewhat coriaceous in texture, and of a shining green; stem erect, clothed below with large alternate sheathing acuminate bracts, which, however, rapidly decrease in size upwards; it attains 1 foot or 18 inches in height, and bears a somewhat lax raceme of from fifteen to thirty flowers, each bloom measuring 1 inch across, the sepals being the portion of the flower most in evidence; dorsal sepal helmet-shaped, which terminates behind in a short conical spur; the lateral sepals are large for the size of the flower, oblong rounded, all creamy white, flushed more or less with flesh colour, and dotted with crimson; petals small, falcate; lip linear, oblong.—*Cape of Good Hope*.

FIG.—*Orchid Album*, x. t. 462; *Bot. Mag.*, t. 7206; *Gard. Chron.*, 3rd ser., 1890, vii. p. 768, f. 127.

D. UNIFLORA.—See *D. GRANDIFLORA*.

D. VEITCHII.—A beautiful hybrid between *D. grandiflora* and *D. racemosa*. The flowers are intermediate in size between the two parents, of a pleasing rosy-purple colour. Flowers in summer months.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxii. p. 465, f. 89; *The Garden*, 1892, viii. p. 403, t. 382.

DOSSINIA, Morren.

(Tribe Neottieae, subtribe Spirantheae.)

This genus is closely allied to *Anoectochilus*, differing chiefly in its spurless three-lobed lip, the claw of which is entire, and the middle lobe dilutely bi-lobed. Only one species, a Bornean plant, familiar in our Orchid houses as *Anoectochilus Lowii*, is known.

Culture.—The cultural treatment is the same as that of *Anoectochilus*, under which genus it is explained in detail.

D. MARMORATA, *Morren*.—A splendid plant, the largest of the species of the *Anoetochiloid* group yet introduced. It grows 6 inches high, and has ovate leaves from 4 to 5 inches long, and 3 inches broad; the colour is a rich dark velvety green, shading off to mellow orange-brown, marked from stalk to point with well-defined deep golden veins, and crossed by lines of the same attractive hue. This remarkable plant was found by Mr. Hugh Low near an opening of a large cavern in the interior of the island.—*Borneo*.

FIG.—*Morren*, *Ann. Gand*, 1848, t. 193; *Flore des Serres*, t. 370; *Blume, Orch. Arch. Ind.*, t. 18; *Xenia Orch.*, t. 96, f. 2; *L'Ill. Hort.*, 1883, xxx. t. 501; *Gard. Mag.*, 1892, p. 135.

SYN.—*Anoetochilus Lowii*; *Macodes marmorata*; *Cheirostylis marmorata*.

D. MARMORATA DAYI, *Hort*.—A highly-coloured form of the plant grown as *Anoetochilus Lowii*, the dark green velvety leaves beautifully veined with coppery red. It is a rare plant, and grows nearly as large as the typical form.—*Borneo*.

D. MARMORATA VIRESCENS, *Hort*.—A charming variety of the above, growing equally large, having the foliage of a lighter green, with brighter markings over the whole surface.—*Borneo*.

EPIDENDRUM, *Linnaeus*.

(Tribe Epidendreae, subtribe Laelicae.)

A very large genus, consisting of upwards of four hundred species, many of which, however, are scarcely worth cultivating except for their botanical interest. They are known by the claw of the lip being distinctly though sometimes slightly adnate to the parallel footless column, the limb being spreading. The base of the column has also a long deep hollow. Though thus rather of a weedy character, the genus contains a limited number of really beautiful species, the flowers of which are showy, being very distinct and attractive in colour. The descriptive list subjoined comprises the best sorts that we know. They are all evergreen, and compact in habit, except *E. cinnabarinum*, *E. crassifolium*, *E. radicans* (*rhizophorum*), and a few others, which are tall-growing, with long slender stems, clothed with small distichous leaves from top to bottom. The other sorts have short round pseudobulbs, with long narrow leaves, except *E. aurantiacum*, *E. bicornutum*, and *E. Stamfordianum*, which grow more in the way of the *Cattleyas*, with upright pseudobulbs, having two or three stout leaves on the top. They all produce their flowers from the top of the stem or pseudobulb, except *E. Stamfordianum*, in which they rise from the base.

Orchid-growers have been more frequently deceived in buying *Epidendrums* than any other group of these plants. The pseudobulbs of many kinds are so nearly alike that it is very difficult to tell what they really are until they flower, which may not take place for several years, and then perhaps, instead of being something good, they only produce dingy green flowers of little or no beauty. Nevertheless, some of these insignificant-flowered kinds are very fragrant, and will perfume the whole house in which they are grown.

Culture.—These plants will all do in the Mexican house, with the exception of *E. bicornutum*, which requires the temperature of the East India house to grow it successfully, and may be grown on blocks of wood, but pot culture is the best for the majority of the species. The drainage must be perfect, and sphagnum moss and peat should be used for potting in about equal parts. They require a season of rest, with the same treatment as the *Cattleyas*, excepting that they need less heat. They are propagated by dividing the plants, as described in the chapter on Propagation.

E. ALATUM, *Batem*.—A pretty species, producing its panicles of flowers in June or July. The pseudobulbs are ovate, bearing two ensate obtuse leaves, and the sweet-scented flowers have the narrow sepals and petals greenish at the base, purple upwards, and the roundish three-lobed lip pale yellow, the broad blunt crispy middle lobe elegantly striped and spotted with rosy purple on the elevated veins. They continue five or six weeks in beauty. There are several varieties of *E. alatum*, but that known as the variety *majus*, distinguished by its larger size, is the only one worth the attention of amateurs. The *E. alatum* of the *Bot. Reg.* is *E. ambiguum*.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 18; *Bot. Mag.*, t. 3898; *Parton, Fl. Gard.*, i. t. 30; *Lem. Jard. Fl.*, t. 81.

SYN.—*E. longipetalum*; *E. calochilum*; *E. formosum*.

E. ALCIFOLIUM.—See *E. FALCATUM*.

E. AMABILE.—See *E. DICHROMUM AMABILE*.

E. ARACHNOGLOSSUM, *Rehb. f.*—A free-flowering and very showy plant, in which the stems are erect, simple, terete, clothed below with distichous oblong-lanceolate obtuse fleshy leaves, above which they run out into elongate rigid erect vaginate scapes, bearing at the end a short corymbiform raceme of violet-crimson flowers; the flowers are small, with oblong acute deep violet-crimson sepals and petals, and a lip of the same colour, three-lobed, the lateral lobes roundish and deeply pectinately-laciniate, the middle lobe cuneiform, deeply bi-lobed, the lobes similarly lacerate, having on the disk a callus of five tubercles, of which the four

upper are golden orange-coloured, and the larger denticulate one pale yellow. We saw this plant well-flowered with W. Lee, Esq., Downside, Leatherhead. It is an almost continuous successional bloomer.—*New Grenada: Popayan*, elevation 6,200 feet.

FIG.—*Revue Hort.*, 1882, p. 554, with tab.

E. ARACHNOGLOSSUM CANDIDUM, *Rehb. f.*—A beautiful white variety, with "only the lateral calli orange." It was discovered by M. E. André.

E. AROMATICUM, *Batem.*—This cannot be called a pretty plant, but it diffuses a most agreeable odour throughout the house; the small branches are available for room decoration. Pseudobulbs pear-shaped, bearing a pair of ligulate acute leaves, which are leathery in texture, deep green and persistent; panicle somewhat sparingly branched, many-flowered, flowers powerfully but agreeably scented; sepals and petals thin in texture, the latter much the broader, all light yellowish-green; lip three-lobed, side lobes narrow, triangular; middle lobe oblong-acute, apiculate, undulated, white in front, veined with deep reddish-violet. Flowers in spring and summer.—*Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 10; *Ref. Bot.*, ii. t. 89.

SYN.—*E. incumbens*, Lindl.

E. ATRO-PURPUREUM, *Willd.*—A very beautiful evergreen species, of free-flowering habit, with ovate or obpyriform rugose pseudobulbs, bearing two ligulate-oblong leaves, and terminal erect peduncles, with well-furnished racemes of handsome flowers; the cuneate-oblong sepals and petals, incurved at the tips, are green at the base, brown above; the three-lobed lip large, pure white, with a feathered crimson blotch at the base of the roundish flabelliform deeply notched front portion. It blooms in April and May, and lasts five weeks in good condition if the flowers are kept free from damp.—*Guatemala, New Grenada, Venezuela (?)*, *Antilles*.

FIG.—*Bot. Mag.*, t. 3534; *Annales de Gand*, 1846, t. 86; *Hooker, First Cent. Orch. Pl.*, t. 18; *Orchid Album*, iv. t. 149; *Lindenia*, ii. t. 49 (var. *Randi*).; *Journ. of Hort.*, 1888, xvii. p. 29, f. 4 (var. *Randi*); *The Garden*, 1887, xxxii. p. 370, t. 619 (var. *album*); *Gard. Mag.*, 1893, p. 546 (var. *Randi*).

SYN.—*E. macrochilum*.

E. ATRO-PURPUREUM ROSEUM, *Rehb. f.*—A beautiful variety of *E. atro-purpureum*, in which the broad ample lip is wholly dark rose colour; it blooms at the same time as the type, and lasts long in beauty. It is equally with it a most desirable plant.—*Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 17; *Parton, Mag. Bot.*, xi. p. 243, with tab.; *Flora des Serres*, t. 306; *Prescatorea*, t. 27; *L'Ill. Hort.*, t. 541; *Veitch's Man. Orch. Pl.*, vi. p. 87.

E. AURANTIA CUM, *Batem.*—A distinct species, similar in growth to *Cattleya Skinneri*; indeed, the stems so nearly resemble those of that plant as to lead to its being often mistaken for it. The stems are clavate, a foot high, two-leaved, and producing their flowers from a sheath at the top of the stem. The leaves are oblong emarginate, flat, leathery; the flowers are in short somewhat drooping dense racemes, of a bright orange, with the lip of the same colour, striped with crimson; the sepals and petals lanceolate; and the lip oblong cucullate, the base

folded over the column, and having three elevated lines on the disk. It blooms in March, April, and May, lasting six weeks in perfection if kept in a cool house. There are two varieties of this plant, both of which we have had growing in the same house under the same treatment. The best variety opens its flowers freely, while in the other they keep nearly closed—a peculiarity which renders the latter not worth growing.—*Mexico and Guatemala*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 12; *Gartenflora*, t. 153.

SYN.—*E. aureum*, f. Rehb.

E. AUREUM.—See *E. AURANTIACUM*.

E. BASILARE.—See *E. STAMFORDIANUM*.

E. BICAMERATUM, *Rehb. f.*—This species appears to have been imported from Mexico with a batch of *E. vitellinum*. Pseudobulbs compressed, oblong, fusiform, two-leaved. "It is quite like *E. vitellinum* in growth, but the flowers are totally different, ochre-coloured, with a deep brown disk; the lip white, ochre-coloured at its base" (H. G. Reichenbach, in *Gardeners' Chronicle*, 1869, p. 710).

SYN.—*E. Karwinskii*.

E. BICORNUTUM, *Hook.*—A remarkably handsome Orchid, which Benthham separates with three other species to constitute the genus *Diacrium*, distinguished by its lip being spreading instead of adnate to the base of the column, and by the presence of two hollow horns between its lateral lobes. It has fusiform furrowed stems a foot or more in height, the younger ones leafy at the summit; the leaves distichous, ligulate-oblong, leathery, dark green; and the peduncles terminal on the mature stems, sometimes producing in one raceme as many as twelve beautiful flowers, each about 2 inches across, of a pure white, with a few crimson spots in the centre of the lip, which has an elongate lance-shaped middle lobe. It blooms in April and May, lasting two or three weeks in beauty. This species is rather difficult to cultivate. The best plant we ever saw was grown on a block of wood without any moss, and flowered five or six years in succession; but in the seventh year it seemed to lose its vigour, and never flowered afterwards, probably because the block began to decay and get sour. We have seen plants do well in pots and baskets with peat and good drainage. It delights in an abundance of heat and moisture.—*Trinidad, Demerara*.

FIG.—*Bot. Mag.*, t. 3332; *Jennings, Orch.*, t. 21; *Purton, Mag. Bot.*, v. 245, with tab.; *Orchid Album*, iv. t. 157; *Gard. Chron.*, 3rd ser., 1887, ii. p. 45, f. 11; *Lindenia*, vii. t. 296; *Veitch's Man. Orch. Pl.*, vi., p. 79; *The Garden*, 1887, xxxii. p. 371 (woodcut).

SYN.—*Diacrium bicornutum*.

E. BITUBERCULATUM, *Rolfe.*—This new species has been recently flowered by Sir Trevor Lawrence, Bart. It is allied to *E. Schomburgkii* according to Mr. Rolfe, who says, "It is a smaller and more slender plant, with smaller rosy-purple flowers, resembling *E. elongatum* in colour" (*Kew Bulletin*, 1892, p. 210).—*Native country not stated*.

E. BRASSAVOLAE, *Rehb. f.*—This fine and remarkable species derives its name from the resemblance in shape which the flowers bear to those of a *Brassavola*. It has obpyriform compressed pseudobulbs a span long, producing from their apex a pair of oblong acute leaves, between which appears a short pointed spathe,

from which the tallish scape bearing many flowers emerges; the flowers are large, 4 inches across, but the parts are narrow; they are very attractive and very durable, the sepals and petals of a rich clear tawny yellow; the rhombic-acuminate lip, which is wedge-shaped at the base, is yellowish-white in the lower half, the front acuminate portion being of a beautiful mauve, and the disk traversed by two or three carinate lines. The flowers are sweet-scented in the evening. In its general habit the plant resembles a large form of *E. prismaticarpum*. It will succeed well in the Mexican house.—*Central America: Vera Cruz; Guatemala*, elevation 8,000 feet.

FIG.—*Bot. Mag.*, t. 5664; *Veitch's Man. Orch. Pl.*, vi. p. 90.

E. CALOCHILUM.—See *E. ALATUM*.

E. CAPARTIANUM, *Linden*.—Pseudobulbs pear-shaped, 3 to 4 inches long, generally two-leaved, peduncle terminal-branched; sepals and petals about equal in size, olive-brown with yellowish margin; lip three-lobed, cream colour at the base, the remainder white, flushed with rose; the middle lobe marked with seven branched lines of rosy-purple.—*Brazil*.

FIG.—*Lindenia*, vii. t. 333.

E. CATILLUS, *Rehb. f. et Warsc.*—A distinct and pretty species of the *Amphiglottium* group, having tall leafy stems, clothed below with stout distichous oblong acute leaves, channelled down the centre and sheathing at the base, the stems running out into long stout scaly peduncles, terminating in erect racemes of numerous highly-coloured showy blossoms, having bright red ovaries and pedicels; the sepals and petals are narrow, obovate-lanceolate, acute, of a deep cinnabar-red, the sepals being glaucous on the outer surface; the three-lobed projecting lip is vermilion, the lateral lobes semi-cordate oblong retrorse, toothed on the outer margin, the front lobe narrow triangular bi-fid, toothed at the ends and connate at the base, with a large obovate yellowish callus, the disk carinate. Its tall habit makes it useful for grouping, and it succeeds well in a cool house.—*New Grenada: Western Cordillera*.

FIG.—*L'III. Hort.*, 3rd ser., t. 162.

SYN.—*E. imperator*.

E. CILIARE, *Linn.*—A very old and curious species, the flowers of which are most deliciously fragrant, especially at night; the stems are clavate, that is, the short fusiform pseudobulbs taper downwards into the scaly stalk; the leaves grow two together from the apex of the pseudobulbs, and are oblong obtuse, the racemes of several flowers rising from between them, each flower having a long spathaceous bract at its base; the sepals and petals are linear, pointed, greenish-yellow, and the lip three-parted, white, the lateral lobes pectinately incised, and the middle lobe setaceous, much longer than the side lobes. It blooms during the winter months.—*West Indies; Tropical America*.

The *E. cuspidatum*, from the West Indies, a very similar plant, is considered a variety of this species, but the flowers are larger and more yellow, and differ chiefly in the middle lobe of the lip being linear-lanceolate and not appreciably longer than the side lobes.

FIG.—*Bot. Reg.*, t. 784; *Id.*, t. 783 (*cuspidatum*); *Bot. Mag.*, t. 463 (*cuspidatum*); *Lodd. Bot. Cub.*, t. 10 (*cuspidatum*); *Redouté Lil.*, t. 82; *Jacquin Amer.*, t. 179, f. 89.

E. CINNABARINUM, Salzm.—A tall-growing plant, having leafy stems 4 feet high, which are furnished with oblong distichous leaves slightly recurved at the point, and bear terminal corymbiform racemes of bright scarlet flowers; these are produced in abundance in May, June, and July, and continue in succession for two or three months. The sepals and petals are lanceolate, scarlet, the lip three-lobed, keeled, with a pair of calli at the base, the side lobes deeply incised, the front lobe contracted in the middle, then suddenly wedge-shaped, with the angles prolonged into one or two fine teeth; the colour of the lip is orange-yellow, spotted with red.—*Brazil; Venezuela.*

FIG.—*Bot. Reg.*, 1842, t. 25; *Hartinger, Parad.*, t. 14.

E. CNEPIDOPHORUM, Lindl.—This is a rare and strikingly handsome cool house Orchid, one which the late lamented Mr Skinner had so much difficulty in getting home alive. It is a vigorous-growing plant, forming tufts of stout leafy stems 4 to 6 feet in height. The leaves sheath the stem, and are about 1 inch wide, 6 to 10 inches long, tapering to a point; the flowers grow in terminal nodding racemes, rarely compound, emerging from a spathe of several blunt sheathing equitant pale green bracts, and are fleshy, about $1\frac{1}{2}$ inch across, on long pedicels, numerous, creamy-yellow outside, the inner surface nearly covered with blotches of rich crimson-brown; the sepals are oblong obtuse, the petals linear, and the lip three-lobed, the side lobes larger, rounded and entire, and the middle lobe wedge-shaped, cleft into two blunt segments, creamy-white tinted with rose, as also is the prominent club-shaped column. Being of strong-growing habit, and throwing out large fleshy roots, it requires abundant pot-room and good drainage. It was flowered first by the late Sir P. Egerton, Bart., at Oulton.—*Guatemala*, elevation 7,000 feet.

FIG.—*Bot. Mag.*, t. 5656.

E. COCHLEATUM, Linn.—This fine old plant may be taken as the first species of the genus which flourished in Europe, which it did at Kew just over a hundred years ago, and choice varieties of this plant are now well deserving a place in our collections. It varies considerably in size of flower and depth of colour. The plant is pretty widely distributed throughout the West Indies and in Mexico, and it enjoys the warmth of the *Cattleya* house. The pseudobulbs are somewhat flask-shaped, compressed, and deep green, bearing on the summit a pair of broad equally deep green leaves, which are oblong-acute, and slightly undulated; the scape is terminal, bearing several flowers; sepals and petals narrowly linear-lanceolate, greenish-yellow, twisted; lip uppermost, in shape resembling the valve of a cockle, deep purple at the back, with greenish-yellow veins on a darker ground inside. Almost a perpetual bloomer.—*West Indies and Mexico.*

FIG.—*Bot. Mag.*, t. 572.

SYN.—*E. lancifolium.*

E. COOPERIANUM, Batem.—A beautiful species, with stout erect rigid stems, growing from 2 to 3 feet high, neat and compact in habit, and thickly clothed in the upper part with stiff distichous lanceolate sharp-pointed leaves. The flowers, which are of a leathery texture, grow in drooping dense many-flowered racemes, and are of a pale olive green or yellowish brown, with the large three-lobed lip of a bright rose colour; the lateral lobes are large and roundish, and the smaller central one kidney-shaped and emarginate. A most desirable species, and of easy culture in the *Cattleya* house.—*Brazil.*

FIG.—*Bot. Mag.*, t. 5654.

E. CORIACEUM.—See *E. VARIEGATUM CORIACEUM*.

E. CRASSIFOLIUM.—See *E. ELLIPTICUM*.

E. CYCNOSTALIX.—See *E. STAMPORDIANUM*.

E. DELLESE, *O'Brien*.—This hybrid was raised in the collection of Baron Sir J. H. W. Schröder, between *E. xanthinum* and *E. radicans*. "Flowers in a terminal head, from twenty to fifty each, 1 inch across; sepals and petals equal, orange-tinted vermilion, darker in the older flowers; lip erect, yellow, toothed or jagged at the tips of the nearly equal three-lobes, which bear three prominent wart-like projections at the base; column slightly curved" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 584).—*Garden hybrid*.

E. DICHROMUM, *Lindl.*—A beautiful and showy species, with ovate fusiform two-leaved pseudobulbs, 3 to 6 inches long, rigid ligulate leaves rounded at the apex, and scapes 3 feet high, bearing bold panicles of flowers, 2 inches in diameter; the sepals are linear-lanceolate, and the petals obovate, both pure white, and the lip lengthened out, deeply three-lobed, the lateral lobes turned up over the column, rose-coloured, yellow and downy at the base, the middle lobe obcordate, ribbed on the disk, with white margin. A most desirable species, "rivaling the best of the *Barkerias*."—*Bahia*.

FIG.—*L'Orchidophile*, 1887, p. 304.

E. DICHROMUM AMABILE, *Batem.*—This lovely variety differs from the preceding in having the sepals and petals rose-coloured faintly tinged with yellow. Side lobes of lip rich purple; mid-lobe wholly rich crimson-purple, with darker streaks margined with white.—*Bahia and Pernambuco*.

FIG.—*Bot. Mag.*, t. 5491; *Batem. Second Cent. Orch. Pl.*, t. 112; *L'Orchidophile*, 1887, p. 304 (*E. amabile*); *Orchid Album*, x. t. 452.

SYN.—*E. amabile*.

E. DICHROMUM STRIATUM, *Rehb. f.*—A very beautiful variety of *E. dichromum*, in which both sepals and petals are white, and all the veins marked out by radiating deep purple lines.—*Bahia*.

E. DIOTUM, *Lindl.*—A pretty plant, but one seldom seen. The pseudobulbs are ovate, lengthened out, bearing a single, somewhat stiff and spreading leathery leaf, which is about a foot long, deep green and persistent, scape as long again as the leaves, bearing numerous flowers, which are upwards of 1 inch across, and very sweet-scented; sepals and petals nearly equal, obovate, acute, with waved edges, cinnamon-brown in colour; lip thick and fleshy, yellow streaked with deep brown. Flowers in the summer months.—*Guatemala*.

E. EBURNEUM, *Rehb. f.*—A handsome and very commendable species, the flowers of which have something the aspect of those of a *Brassavola*. It grows 2 feet high, its erect fascicled terete stems being furnished with large spreading linear-oblong obtuse amplexical coriaceous leaves of a deep green colour, placed alternately upon the stems. The raceme is terminal, consisting of four to six flowers, which have linear-lanceolate acuminate sepals $1\frac{1}{2}$ inch long, white tinted

with pale citron-green, similar but somewhat narrower petals, and a large orbicular-cordate ivory-white sessile lip, $1\frac{1}{2}$ inch in diameter, and having two small yellow calli at the base. The plant is well worthy of general cultivation.—*Panama: near Colon, in swamps.*

FIG.—*Bot. Mag.*, t. 5643.

E. ELEGANS.—See *BARKERIA ELEGANS*.

E. ELLIPTICUM, *Graham*.—Though not so ornamental as many of its congeners, this is a very pretty and lively-looking species on account of its free-flowering habit. It has tall erect leafy stems, attaining a height of 2 or 3 feet or more, furnished below with distichous elliptic blunt coriaceous sheathing dark green leaves, the upper part running out into a long jointed bracteate peduncle, terminated by a corymbiform raceme of rose-coloured flowers, which are produced in profusion in March, April, May, and June, the plant continuing to bloom for three or four months. The sepals and petals are obovate-lanceolate, and the lip three-lobed, the lateral lobes roundish-cuneate, and the middle one larger and obcordate, all of a pleasing rose colour.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3543; *Hook. Ex. Fl.*, t. 207; *Lodd. Bot. Cab.*, t. 1276.

SYN.—*E. crassifolium*.

E. ELONGATUM, *Jacq.*—In habit of growth it resembles *E. ellipticum*; the stems are slender, erect, and leafy, but they are longer and thinner; the leaves are ovate and acute, and the flowers are bright rich rose-colour. Flowers in spring and early summer.—*West Indies, &c.*

FIG.—*Bot. Mag.*, t. 611.

SYN.—*E. secundum*.

E. ENDRESII, *Rchb. f.*—A dwarf growing species with stems about a span high, bearing small ovate-cordate leaves, about 1 inch long, hard and stiff like those of *Box*. Raceme terminal, erect. "The flowers are of the purest white, wax-like in texture, the only colour being some prettily-arranged violet spots on the centre of the lip, and its wings enclosing the column, and two raised orange-coloured marks in the middle of the lip, and immediately beneath the cap of the column" (J. O'Brien, in *Gardeners' Chronicle*).—*Costa Rica*.

FIG.—*Gard. Chron.*, N.S., 1885, xxiii. p. 504, f. 91.

E. ENDRESIO-WALLISII, *Rolfe*.—This hybrid, between *E. Wallisii* and *E. Endresii*, was raised by Mr. Seden, and exhibited by Messrs. J. Veitch & Sons before the Royal Horticultural Society, January 12, 1892, when it was awarded a first class certificate. The flowers are intermediate between those of the two parents, and measure 1 inch in diameter; the colours of the flowers seem to vary considerably, some being described as having "the sepals and petals dotted with maroon, and the four-lobed lip light yellowish-white irregularly blotched and veined with dull purple; in others the sepals and petals are darker except at the base which is pallid, and the lip almost suffused with light purple and veined with darker purple on the disk; again, in others the sepals and petals are light yellow at the base, and purple above"; lastly, "the lower half of the sepals and petals is described as yellowish-white, and the upper part suffused and spotted with light purple; the lip is also suffused with this colour, but scarcely at all veined" (*Orchid Review*, i. p. 104).—*Garden hybrid*.

E. ERUBESCENS, *Lindl.*—A magnificent species of very distinct habit, making long woody rhizomes, which root from the under side and bear the fusiform two-leaved pseudobulbs at intervals of about 6 inches. The leaves are oblong acute, and the flowers grow in ample flexuose panicles; the oblong obtuse sepals and similarly formed unguiculate petals are broad, and of a beautiful delicate mauve, while the three-lobed lip, which has the middle lobe sub-rotund, and marked with three elevated veins, is of a darker shade of the same colour, and yellow at the base. The flowers last in beauty for six or eight weeks, so that the species is a very desirable one for the cultivator; it is, however, somewhat difficult to grow. We have found it thrive well on long blocks of wood in the cool house with *Odontoglossums*, where it was always kept damp at the roots.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 32.

E. EVECTUM, *Hook. fil.*—A very well-marked and beautiful evergreen species, which may be said to be a perpetual bloomer. It is one of the group having tall leafy stems, the upper part of which runs out into a leafless peduncle furnished with bracts, and terminating in the inflorescence; the stems are fasciated, bulbiform at the base, 3 to 5 feet high, branching and rooting, bearing leaves towards the upper end; the leaves are distichous, 4 to 6 inches long, oblong-lanceolate, emarginate, leathery, and somewhat clasping the stem at their base; the peduncles run out from the top of the stem, and are bracteate with the lower bracts sheathing, the apex bearing a short sub-cylindrical many-flowered raceme; the flowers have long pale red pedicels, and are of a deep magenta-purple, the sepals and petals being narrowly obovate, and the lip three-lobed, the lateral lobes cuneate, the middle one deeply parted into two sub-quadrate divaricate segments, all the lobes being deeply lacerated at the outer margin. It is the finest of the section to which it belongs, and its beautiful high-coloured flowers last a long time in perfection. It has been grown at Kew for many years, flourishing at the cool end of an intermediate house.—*Supposed to be from New Grenada*.

FIG.—*Bot. Mag.*, t. 5902; *Veitch's Man. Orch. Pl.*, vi. p. 123.

E. FALCATUM, *Lindl.*—A rather handsome species when well grown. The plant is pendulous in habit and very distinct from any of the other *Epidendrums*, having branching stems, which are sparsely leafy, the leaves oblong-lanceolate, thick, a foot long, and having a curiously tapered narrow point; the flowers, which are large, proceed from the top of the bulb, one or two together; the sepals and petals are linear-lanceolate, 2 to 2½ inches long, of a pale yellowish-green, tinted with olive-brown, and the lip is orange-yellow, three-lobed, the lateral lobes large, semi-cordate, crose, and the middle one linear-acuminate, entire. It blooms during the summer months, and lasts long in beauty. This plant is best grown in a basket with moss.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3778; *Batem. Orch. Mex. et Guat.*, t. 25; *Hook. First Cent. Orch. Pl.*, t. 14.

SYN.—*E. Parkinsonianum*; *E. aloifolium*; *E. lactiflorum*.

E. FALSILOQUUM, *Rchb. f.*—This species is allied to *E. verrucosum* (*Swartz*), and was first flowered by Mr. W. Bull in 1885. "The anterior lacinia of the lip has from its narrow base two diverging linear blunt shanks just as in *E. verrucosum* (*Swartz*); the leaves are linear acuminate, with purple lines on the sheaths; the general colour of the paniculate flowers is a whitish ochre for

the sepals and petals; the lip is white with three linear acute depressed mauve keels, the semi-ovate basilar calli being white; there is a single purple spot on each side of the lacinia of the androclinium" (H. G. Reichenbach, in *Gardeners' Chronicle*, N.S., 1885, xxiii. p. 566).—*Native country not stated.*

E. FLOS AËRIS.—See *RENANTHERA MOSCHIPERA*.

E. FORMOSUM.—See *E. ALATUM*.

E. FRAGRANS, *Swartz*.—This plant, although not a showy kind, really deserves a place in the stove, on account of the perfume it yields. It should be grown in the intermediate house. Pseudobulbs fusiform, compressed, bearing a single lanceolate leaf, which is recurved at the point, deep green and persistent; scape short and few-flowered; flowers very fragrant, creamy-white; lip uppermost, cuspidate, creamy-white, streaked with crimson. Blossoms in the summer and autumn months.—*West Indies; Tropical America.*

FIG.—*Bot. Mag.*, t. 1669.

E. FRAGRANS MEGALANTHUM, *Lindl.*—It appears to be a gigantic form, being very much stronger in its growth. The flowers are large and very fragrant, and the lip is broadly streaked with deep crimson. It was introduced by Mr. Skinner, but we have not seen it for a long time. If it does not exist any more in our collections, it is a very desirable plant to re-introduce. Blooms in summer and autumn months.—*Guatemala.*

E. FREDERICI GUILIELMI, *Warsc. et Rehb. f.*—An erect-growing evergreen species of ornamental character, with tall robust stems 1 inch in diameter at the base, clothed with distichous cuneate obovate shortly acuminate leaves 1 foot long and 4 inches broad; the stems grow out into a purple peduncle, supporting a short broad many-flowered raceme, the long pedicels being also of a purple colour; the flowers are of a rich crimson; the sepals and petals are narrow lanceolate, acute, the lip three-lobed, the lateral lobes roundish semi-cordiform, the middle lobe tongue-shaped, acuminate, with two large blunt rhomboid calli at its base, the calli as well as the apex of the column being white, hence the flowers appear to have a white eye. It flowers in June, and being of fleshy texture the blossoms last for a considerable time.—*Northern Peru*, elevation 6,000—8,000 feet.

FIG.—*Xenia Orch.*, i. t. 51; *L'III. Hort.*, 3rd ser., t. 48; *Puydt, Les Orch.*, t. 19.

E. FULGENS.—See *E. SCHOMBURGKII*.

E. GODSEFFIANUM, *Rolfe*.—This new species was imported by Messrs. F. Sander & Co., from the same district as *Cattleya labiata*. "It bears some resemblance to this species in shape, but is very different in colour, in which respect it is more like *E. bifidum*, whose shape, however, is very different. The bi-lobed lip unmistakably places it in this group, though in general appearance it more nearly resembles some other species, whose lip has not this character, which suggests the query whether the species could not be more naturally arranged by some other character. This point, however, may be left for the present. *E. Godseffianum* has the general habit of other species of the group, and the flowers measure over $1\frac{1}{2}$ inch across; their colour is light green, somewhat nerved with light brown, except the lip, which is white, the front lobe being lined with bright rose-purple" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 136).—*Brazil.*

E. GRAHAMII.—See *E. PHOENICEUM*.

E. GUTTATUM.—See *ONCIDIUM LURIDUM GUTTATUM*.

E. HANBURII, *Lindl.*—A distinct and well-marked species, which, though not so showy as some of its congeners, is worth growing on account of its pleasing colour. It has largish ovate pseudobulbs, broad ensiform leathery leaves, and scapes about 2 feet high, bearing well-filled racemes of flowers; the spathulate sepals and petals are deep purple, and the three-lobed lip pale rose with radiating crimson veins. It blooms during the spring months, lasting long in beauty.—*Mexico*.

FIG.—*Gartenflora*, t. 398.

E. IBAGUENSE, *Humb. et Kunth.*—A very handsome species, with tall slender stems as thick as a swan's quill, leafy in the upper portion, the leaves very fleshy, oblong obtuse, and stem-clasping, the extreme end of the stem leafless, and terminating in a dense almost globose head of orange-coloured flowers with a yellow obcordate lip, the lateral lobes of which are cordate, rounded at the tip and fimbriate.—*New Grenada; Peru*.

FIG.—*Floral Mag.*, t. 390.

E. IMPERATOR.—See *E. CATILLUS*.

E. INCUMBENS.—See *E. AROMATICUM*.

E. INVERSUM, *Lindl.*—This is a pretty little species, one that is seldom seen in collections however, but it is useful for its delicate colour, for its grateful perfume, which is not powerful, and the time of year at which it blooms. It is a plant that enjoys the temperature of the intermediate house. Pseudobulbs elongate, slightly compressed, some 6 inches high, bearing a pair of oblong obtuse leaves which are deep green; scape terminal, bearing about six or eight flowers, the lip uppermost as in *E. cochleatum*, sweet scented; sepals and petals nearly equal, linear-lanceolate, milk-white; lip ovate, acuminate, milk-white, with a few streaks of purplish-mauve round the base. Flowers in the autumn and winter months.—*Province of Minas Geraes, Brazil*.

FIG.—*Revue Hort. Belge*, 1892, p. 169, t. 15.

E. KARWINSKII.—See *E. BICAMERATUM*.

E. KIENASTIANUM, *Rehb. f.*—This new species was first flowered by Consul Kienast Zölly, Zurich, and is described by the late Prof. Reichenbach, in the *Gardeners' Chronicle*, 1887, ii. p. 126, as follows:—"You may compare the bulbs to those of a small *E. aurantiacum*, as they are thinner and shorter. The leaves, usually two, are cuneate-oblong acute, sometimes even more than an inch wide, at others scarcely $\frac{1}{2}$ an inch broad, 6 inches long, not of a considerably thick substance; the raceme has several flowers, two-thirds in extent of those of *E. nemorale*, *Lindl.*; the bracts are triangular, rather short, equalling one-fifth of the stalked ovaries; sepals lanceolate, the median one now dilated at the top, as an exception; petals much cuneate at the base, oblong acute; lip tri-partite, side partitions cuneate-ligulate, two-toothed outside, mid lacinia cuneate oblong acute, wavy."—*Mexico*.

E. LACTIFLORUM.—See *E. FALCATUM*.

E. LEUCOCHILUM, *Lindl.*—Stem about 2 feet high, bearing distichous recurved leaves, which are coriaceous in texture, ovate, acute, deep green, persistent; scape terminal issuing from a large oblong-acute spathe, many-flowered; flowers large, 3 inches across; sepals and petals nearly equal, linear-lanceolate, yellowish-green; lip three-lobed, side lobes large and flat, orbicular, middle lobe somewhat oval, all pure white.—*New Grenada*, 9,600 feet elevation.

FIG.—*Icones Berolensis*, t. 46.

SYN.—*E. flavidum*.

E. LINDLEYANUM.—See *BARKERIA LINDLEYANA*.

E. LONGIPETALUM.—See *E. ALATUM*.

E. MACROCHILUM.—See *E. ATRO-PURPUREUM*.

E. MACULATUM.—See *E. PRISMATOCARPUM*.

E. MEDUSAE.—See *NANODES MEDUSAE*.

E. MOOREANUM, *Rolfe*.—"It belongs to the section *Encyclium*, and is allied to *E. stellatum*, *Lindl.* The flowers are very fragrant; the sepals and petals light green, and the lip deep purple, with light green margin. It is named in compliment to Mr. F. W. Moore, of Glasnevin, who first sent it to Kew" (*Gardeners' Chronicle*, 3rd ser., 1891, x. p. 215).—*Costa Rica*.

E. MYRIANTHUM, *Lindl.*—A charming plant of a "most brilliant" character, very rare in cultivation. It has tall but graceful stems growing about 3 feet high, and clothed with long linear-lanceolate distichous leaves, the sheathing bases of which are marked by black dots; above the leaves is borne a magnificent pyramidal compound panicle of small but very numerous flowers, which are of a nearly uniform ruby-red. It flowers in June, and continues long in beauty. It will not bloom if subjected to much heat; the cool house, therefore, will suit it best.—*Mountains of Guatemala*.

FIG.—*Bot. Mag.*, t. 5556; *Batem. Second Cent. Orch. Pl.*, t. 163.

E. MYRIANTHINUM ALBUM, *Rehb. f.*—In this plant, which is identical in growth to the species, the panicles of flowers are said to be of the purest white. We have seen the plant but have not yet seen it bloom.—*Guatemala*.

E. NEMORALE, *Lindl.*—A noble evergreen species, of vigorous habit, with ovate pseudobulbs 4 inches high, bearing on the top two ensiform obtuse leaves 1 foot long, of a light green colour, and from between them a stout warty peduncle 3 feet long, supporting an ample drooping panicle of flowers which are individually 4 inches across, and, when expanded, have a remarkably handsome appearance. It makes a fine exhibition plant, on account of its being well adapted for travelling, and from its distinct and pleasing colour. The sepals and petals are linear-lanceolate acuminate, of a delicate rosy-mauve, the three-lobed lip having the middle lobe oval crenulate, white in the centre, with three short red lines, and bordered with deep rose. There are several varieties of this

species all worthy of cultivation. It is found growing on rocks and trees, and will do well in the *Cattleya* house.—*Mexico*.

FIG.—*Bot. Mag.*, t. 4606; *Bot. Reg.*, 1844, t. 51; *Lem. Jard. Fl.*, t. 253; *Butem. Second Cent. Orch. Pl.*, t. 135; *L'Orchidophile*, 1888, p. 305; *Lindenia*, iv. t. 155; *Veitch's Man. Orch. Pl.*, vi. p. 107.

SYN.—*E. verrucosum*, Hort.

E. NEMORALE MAJUS, Warner.—This is a vastly superior variety of what is in any form a most desirable plant. It is of the same style of growth and habit, but bears a magnificent panicle of flowers, sometimes 3 feet long with seven branches, the colours being paler and more delicate than in the type, the linear-lanceolate sepals and petals being of a very light tint of rosy-mauve, and the large front lobe of the lip distinctly white in the centre with the three short red lines very distinctly marked; the smaller acute falcate side lobes are of a deeper rose, and reflexed at the ends.—*Mexico*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 13.

E. NIGRO-MACULATUM.—See *E. PRISMATOCARPUM*.

E. O'BRIENIANUM, Rolfe.—A cross between *E. erectum* and *E. radicans*. The following description is from Messrs. J. Veitch & Sons' Catalogue, as we have never seen this plant, which is, we believe, the first hybrid obtained in gardens in this genus, and one which should be an ornament in the cool house. "In habit it much resembles *E. radicans* as it bears roots along the stems like that species. The floral segments are longer than in *E. erectum*, but have the same general shape; the column is almost as straight as in *E. erectum*, while in *E. radicans* this organ is curved. The shape and cutting of the lobes of the lip are also much like those of *E. erectum*; finally, the coloration is very interesting; in *E. erectum* the whole flower is of a clear purple, while in *E. radicans* the segments are orange-scarlet, the apex of the column and centre of the lip being deep yellow; in the hybrid the colour is an uniform brilliant carmine, with a trace of the orange-shade, the pair of crests on the lip being bright yellow." Flowers in the spring and summer months.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iii. p. 771, f. 103.

E. PANICULATUM, Ruiz et Pavon.—This is a noble plant, with leafy stems, 3 or 4 feet high, in the way of those of *E. myrianthum*. The dark green leaves are distichous oblong-lanceolate acuminate, often spotted beneath with purple; the flowers are produced from the top of the stem in a dense branched nodding panicle upwards of a foot long, many-branched, and bearing a profusion of lovely rosy-lilac fragrant blossoms, which are produced in April, and last a long time in beauty; the sepals are small spathulate ligulate, the petals almost filiform, and the lip deeply four-lobed. It will succeed in a cool house.—*Peru; Bolivia; New Grenada*.

FIG.—*Bot. Mag.*, t. 5731; *L'Ill. Hort.*, 3rd ser., t. 211; *Lindenia*, i. t. 7.

E. PARKINSONIANUM—See *E. FALCATUM*.

E. PAYTENSE, Rehb. f.—A very pretty species, with roundish stems, short oblong acute leaves, and racemes of flowers of a most brilliant scarlet-vermilion, the lip orange, spotted with dark vermilion. Introduced by Dr. Wallace.—*U.S. of Colombia*.

E. PHOENICEUM, *Lindl.*—A rather pretty species, with roundish ovate pseudobulbs, a pair of erect narrowly oblong leathery leaves, and a scabrous panicle 2 to 3 feet high, bearing good sized scentless flowers, of which the obovate lanceolate sepals and petals are purple, and the roundish undulated emarginate lip is of a clear bright rose with deep coloured veins and stains in the centre. It blooms during the summer months. The variety *vanillosum*, which is the same as *E. (Grahami)*, differs in being vanilla-scented, and in having a white lip spotted with rose.

FIG.—*Sert. Orch.*, t. 46; *Paxton, Mag. Bot.*, ix. p. 97, with tab.; *Flore des Serres*, t. 47; *Id.*, t. 306 (var. *vanillosum*); *Bot. Mag.*, t. 3385 (*Grahami*).

SYN.—*E. Grahami*.

E. POLYBULBON, *Swartz.*—A beautiful dwarf growing plant, not exceeding $2\frac{1}{2}$ or 3 inches in height. The small pseudobulbs are about $\frac{1}{2}$ inch high, and are produced on creeping rhizomes, each carrying two linear-oblong leaves about 1 inch long; flowers $\frac{3}{4}$ inch in diameter having narrow linear sepals and petals of a purplish hue with yellow margins; lip pure white. It appears to be very free flowering, at least a specimen exhibited by Sir Trevor Lawrence, Bart., before the Royal Horticultural Society on January 16th, 1894, was literally covered with flowers.—*West Indies; Mexico.*

FIG.—*Hook. Ex. Fl.*, ii. t. 112; *Bot. Mag.*, t. 4067.

E. PRISMATOCARPUM, *Rehb. f.*—A strikingly handsome Orchid, well-marked in character, and deserving of general cultivation. It is robust in habit, and has pyriform slightly furrowed pseudobulbs tapered upwards, and crowned with two or three ligulate evergreen leaves a foot long. The scapes are erect, produced from the top of the pseudobulbs, and each bears a raceme of about fourteen flowers, which have oblong-lanceolate acuminate sepals and petals, pale creamy-yellow with large dark purple blotches, the column of the same creamy yellow, and the narrowly triangular free part of the lip rose colour margined with pale yellow. It blooms in June and July, and will last several weeks in perfection. There are several varieties of this species.—*Central America: Chiriqui.*

FIG.—*Bot. Mag.*, t. 5336; *Xenia Orch.*, ii. t. 123; *Warner, Sel. Orch. Pl.*, i. t. 9; *Batem, Second Cent. Orch. Pl.*, t. 109; *Reichenbachia*, ii. t. 76; *Lindenia*, v. t. 200; *Veitch's Man. Orch. Pl.*, vi. p. 112.

SYN.—*E. maculatum*; *E. nigro-maculatum*; *E. Uro-Skinneri*.

E. PRISTES, *Rehb. f.*—"A slender plant, with the habit of *E. ellipticum*, but with larger and very bright flowers; the pedicels are white at the base, cinnabar at the top; sepals lanceolate, petals equal, but serrate on the superior half, all cinnabar red; lip tri-fid as described in diagnosis, finest yellow, with a few cinnabar spots" (*Reichenbach in Gardeners' Chronicle*, n.s., 1886, xxvi. p. 262).—*Native country not stated.*

E. PSEUDEPIDENDRUM, *Rehb. f.*—A very distinct and striking species, producing rather scanty terminal racemes of lovely flowers. It has long reed-like stems 2 to 3 feet high, cylindrical with a tumid base, and bearing near the top the distichous linear-oblong acuminate leaves, which are leathery, dark green, and about 6 inches long; the terminal few-flowered racemes have very slender peduncles and pedicels; the flowers are $2\frac{1}{4}$ inches in diameter, with the narrow spatulate sepals and narrower petals of a bright green, and the lip 1 inch broad, nearly orbiculate, retuse, with the margin yellowish and serrulate, rich orange-scarlet, the disk traversed by five keels and having a three-lobed

callus at the base. The effect of the scarlet lip against the green sepals and petals is charming, and is a combination of colours seldom met with. It was introduced by M. Warszewicz, and flowers in January and February.—*Central America: Chiriqui*, elevation 4,000 feet.

FIG.—*Bot. Mag.*, t. 5929; *Xenia Orch.*, i. t. 53; *Veitch's Man. Orch. Pl.*, vi. p. 113.
 SYN.—*Pseudepidendrum spectabile*.

E. PUNCTATUM.—See *CYRTOPODIUM PUNCTATUM*.

E. PUNCTULATUM, *Rehb. f.*—"This is very near *E. amabile*. It is distinct in the presence of a sessile ovate acute mid-lacinia, and in the side-laciniae of the lip being square; there is a slender panicle with stellate flowers; sepals and petals lanceolate acute, brown-green outside; lip tri-fid, sulphur-coloured, with minute brown point-like spots. Plant nearly as in *E. vitellinum*" (Reichenbach in *Gardeners' Chronicle*, N.S., 1885, xxiv. p. 70).—*Mexico*.

E. PURUM, *Lindl.*—This is one of the pretty small-growing species with slender stems, but it does not appear to have found that favour with the Orchid growers of this country which the delightful odour of its flowers should warrant it in obtaining. Pot culture in the cool end of the intermediate house suits this plant admirably. Stems erect, about 2 feet long, stout for their length, clothed with narrow obtuse leaves, which are about 6 inches long, less than $\frac{1}{2}$ inch wide, light green, persistent; scape terminal, bearing a slender, nodding raceme of pure white flowers, which yield a delightful fragrance resembling heliotrope. Flowers in spring and summer months.—*Caraacas*.



EPIDENDRUM RADICANS.

E. RADICANS, *Paron.*—A pretty but shy-flowering ever-green scandent Orchid, the tall erect leafy stems often reaching 10 feet in height; the distichous leaves are ovate oblong sub-cordate and partially sheathing; the bright orange-scarlet flowers are produced in corymbiform racemes on the leafless scaly terminal growths, the sepals and petals

being acutely lanceolate, and the lip three-lobed, with the side lobes toothed, and the cuneate bi-parted front lobe deeply laciniate; the same spike will keep

in beauty for three months. It is best grown in a pot in peat, with good drainage. When the plant becomes tall it should be trained round some sticks, which is the best way to make it flower. We have known the late Mr. Woolley, of Cheshunt, to have the same plant in flower for twelve months at a time.—*Mexico: Guatemala.*

FIG.—*Parton, Mag. Bot.*, xii. p. 145, with tab.; *Orchid Album*, iv. t. 161.

SYN.—*E. rhizophorum*.

E. REPLICATUM, *Lindl.*—This species is frequently met with in collections, but is not well known. It thrives either in a pot or upon a block of wood; under the latter system we have had it do best, and in the temperature of the intermediate house. Pseudobulbs oblong-ovate, bearing a pair of long narrow strap-shaped leaves, which are acuminate, leathery in texture, deep green, and persistent; racemes terminal, 1 foot to 18 inches long, many-flowered; sepals and petals yellowish-brown, with a marginal border of yellow; lip three-lobed, the side-lobes erect, the sides of the front lobe turned downwards, white, streaked and veined with rosy-pink. Blossoms in the summer months.—*New Grenada.*

E. RHIZOPHORUM.—See *E. RADICANS*.

E. SANGUINEUM.—See *BROUGHTONIA SANGUINEA*.

E. SCEPTRUM, *Lindl.*—A very old and pretty species, but very rare in cultivation. It is quite distinct in growth, having compressed pear-shaped pseudobulbs 1 foot long, long thin remote lorate leaves, and erect racemes 1 to 2 feet long, bearing very numerous flowers, as many as three dozen sometimes being collected in one raceme, the peduncle of which proceeds from the apex of the pseudobulb; the lanceolate sepals and obovate petals are brilliant golden yellow spotted with dark purple, and the lip is white at the base, profusely marked with bright purple. The flowers, although small, are produced in such profusion as to render this a most ornamental plant. It blossoms in September and October.—*Venezuela; New Grenada.*

FIG.—*Bot. Mag.*, t. 7169.

E. SCHOMBURGKII, *Lindl.*—A very handsome species in the way of *E. cinnabarinum* and *E. radicans*, having the upper portion of the stems leafless but furnished with sheathing bracts, and terminating in a short close or corymbiform raceme of rich vermilion-scarlet flowers. The leaves are distichous, oblong obtuse, fleshy, and in the wild plant bordered with crimson dots; the sepals and petals are linear-lanceolate; the lip three-lobed, strongly keeled, and bi-callose at the base, the lateral lobes broad semi-ovate, rounded and lacerate behind, the front lobe cuneate gradually widening upwards, the edge denticulate, and the apex with a short triangular cusp; the form of the lip offers considerable variation, a frequent change being that the lobes run nearly together into one circular plate.—*Demerara; Brazil; Peru.*

FIG.—*Bot. Reg.*, 1838, t. 53; *Mauud, Bot.*, iv. t. 165; *Duperrey, Voy.*, t. 43.

SYN.—*E. fulgens*.

E. SECUNDUM.—See *E. ELONGATUM*.

E. SKINNERII.—See *BARKERIA SKINNERII*.

E. SOPHRONITIS, *Rehb. f.*—This is a very curious little plant, more curious than beautiful, but yet producing flowers of sufficient size to make it attractive. The rhizome is creeping, from which spring small pseudobulbs some $\frac{1}{2}$ inch long, these are ovoid, and bear on their summit two or three coriaceous leaves, which are oblong-lanceolate, acute, some 3 inches long, and $\frac{1}{2}$ inch wide, creamy-green on both surfaces, and narrow. Flowers dull yellow-green, mottled with violet-purple.—*Peru*.

FIG.—*Bot. Mag.*, t. 6314.

E. STAMFORDIANUM, *Batem.*—A handsome spotted-flowered species of very distinct character, being one of the few which produce a radical inflorescence. It has fusiform pseudobulbs a span long, tapering below into a slender scaly foot-stalk, and terminated by three or four oblong obtuse coriaceous leaves 6 or 7 inches long; the peduncle rises from the base and bears a large many-flowered panicle of fragrant blossoms which are $1\frac{1}{2}$ inch across, of a bright yellow tinged with green, thickly decorated with blood-red spots, those of the petals being larger and fewer than those on the sepals, while the lip has the lateral lobes creamy-white and the front lobe yellow, the latter being sparingly spotted; the sepals and petals are lanceolate, the lip three-parted, flat, the lateral lobes large oblong, the middle one transversely oblong, emarginate, and fimbriate; the type is described as having a vivid violet spot at the base of the lip, while in the variety *pictum* there is a crimson line down the centre of that organ. It blooms in April and May, lasting a considerable time in perfection. There are two varieties of this plant, one having much brighter coloured flowers than the other; the best form is characterised by having longer and thinner bulbs than the other.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 11; *Klotzsch, in L. K. & O., Ic. Pl. Rar. Berol.*, t. 45; *Bot. Mag.*, t. 4759 (*pictum*); *Lem. Jard. Fl.*, t. 251 (*pictum*); *Veitch's Man. Orch. Pl.*, vi. p. 119.

SYN.—*E. basilare*; *E. cyenostalis*, fide *Rehb.*

E. STAMFORDIANUM LEEANUM, *Rehb. f.*—The late Prof. Reichenbach thus describes this lovely variety in the *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 520:—"Mr. W. Lee sends me a lovely variety of this fine plant, in which the sepals and petals are covered with purple hieroglyphic-like markings on an ochre-coloured ground inside, scarcely translucent outside; the broad lip is of the lightest rose colour, and covered all over with fine purple spots inside. It is very distinct from *E. Stamfordianum Wallacei*. It was likewise collected by Mr. Alexander Wallace, who appears to have been singularly fortunate as to this fine species. I very gladly dedicate this very surprising plant to Mr. W. Lee, whose grand collection is so duly praised."

E. STAMFORDIANUM WALLACEI, *Rehb. f.*—The late Professor Reichenbach describes this variety as follows:—"The mid-lacinia of the lip is obcordate, quite entire, and very narrow; it would also appear that the column is constantly shorter."

E. STENOPETALUM, *Hook.*—This is an extremely beautiful species, and it is also rare, the flowers resemble somewhat at first sight those of *Dendrobium bigibbum*, but of course their differences are plainly visible. Stems slender, erect, bearing strap-shaped leaves, which are oblong-acuminate, and

deep green; the umbel of flowers is terminal, many-flowered; flowers flat and spreading, about $1\frac{1}{2}$ inch across; sepals narrow oblong-acuminate; petals much broader, obovate, acute, all bright rose colour; lip somewhat obovate, notched in front, joined to the column at the base, where it is white, in front of which is a blotch of rosy-purple, the remaining portion being of the same bright rose as the petals. Flowers in the winter months.—*Venezuela*, at 3,000 feet elevation.

FIG.—*Bot. Mag.*, t. 3410.

E. SYRINGOTHYRSUS, *Rehb. f.*—A tall-growing and extremely handsome cool house species, the moderately slender tufted stems of which attain a height of 3 to 4 feet, and are clothed with distichous sheathing elliptic-lanceolate recurved leathery leaves, which are about 6 inches long, and of a light green colour. The flowers are produced in dense ovoid racemes, which bear from seventy to eighty flowers on long slender pedicels, which are of a reddish-purple like the flowers, the sepals and petals being small elliptic-lanceolate, and the small three-lobed lip white on the disk with three tumid yellow calli, and of the same reddish-purple as the rest of the flower in front.—*Bolivia*, elevation 7,000 to 8,000 feet.

FIG.—*Bot. Mag.*, t. 6145.

E. TOVARENSE, *Rehb. f.*—A pretty dwarf-growing species with erect stems about 12 inches high; raceme terminal, few flowered; flowers white, pink on the outside.—*Tovar*, U.S. of *Colombia*.

E. URO-SKINNERII.—See **E. PRISMATOCARPUM**.

E. VARIEGATUM CORIACEUM, *Lindl.*—This represents a form of a pretty and very variable species, and one that may be best known by its downy lip. It requires the temperature of the intermediate house. This variety differs from the species in having leathery leaves, and in the sepals and petals being creamy-white, dotted with purple; lip also cream-coloured, streaked with dull purple. Winter months.—*Demerara*.

FIG.—*Bot. Mag.*, t. 3595.

SYN.—*E. coriaceum*.

E. VERRUCOSUM, *Swartz.*—This plant must not be confounded with the *E. verrucosum* of Lindley, which is the *E. nemorale*. Lip three-lobed, side lobes creamy-white, front lobe yellow, with a very bright spot of violet at the base. Flowers in spring and early summer.—*Guatemala*, near the coast.

E. VERRUCOSUM, *Lindl.*—See **E. NEMORALE**.

E. VIRGATUM, *Lindl.*—This species is merely introduced to warn some of our readers against buying it for *E. vitellinum*, to which it bears much resemblance in its growth, but it is more glaucous, whilst the flowers are small, of a dull green and brown. We recently saw this plant in a collection which had been bought for *E. vitellinum majus*, and it gave great dissatisfaction upon flowering, and no wonder. It is said to grow upon the ground, amongst *Pteris aquilina*, on the Coban Mountains.—*Mexico*.

E. VITELLINUM, *Lindl.*—A beautiful dwarf-growing plant, one of the most brilliant of the family, and one which is very distinct in character. The pseudobulbs are ovate acuminate, and bear two oblong-ligulate acute glaucous leaves, and erect many-flowered racemes of brilliant vermilion-orange blossoms, of which the sepals and petals are ovate-lanceolate, and the lip linear-acuminate and together with the column of a bright yellow colour. It blossoms during the autumn months, and lasts six weeks or more in good condition. This is best grown in the Mexican house, as it delights in an abundance of light; but it will also do well with the *Odontogloss* in the cool house, and requires plenty of moisture at the roots.—*Mexico: Guatemala, on cloud-capped mountains amidst continual mists.*

FIG.—*Sertum Orch.*, t. 45; *Bot. Reg.*, 1840, t. 35; *Bot. Mag.*, t. 4107; *Moore, Ill. Orch. Pl.*, *Epidendrum*, t. 1; *Paton, Mag. Bot.*, v. p. 49, with tab.; *Flore des Serres*, t. 1026; *L'Ill. Hort.*, t. 4; *Otto & Deit., Allg. Gartenz.*, 1855, t. 9; *Hook. First Cent. Orch. Pl.*, t. 19; *Lindenia*, v. t. 196; *Reichenbachia*, i. t. 47.

E. VITELLINUM MAJUS, *Hort.*—This beautiful variety is of the same colour as the typical *E. vitellinum*, the only difference being in the size of the flowers, which are considerably larger, the sepals and petals broader, and very thick and fleshy in texture. It usually flowers during the summer months, and lasts in bloom for an immense time. It sends up from the top part of the bulbs its brilliantly-coloured blooms, which issue from a sheath formed in autumn. The plant requires the same treatment as the type. Mr. R. Warner, of Chelmsford, grows a large quantity of this plant with his *Odontoglossums*, and the effect of these when in flower and interspersed with them is charming. It is, moreover, one of the best Orchids for exhibition purposes on account of its lasting such a long time in perfection. It is easily packed and bears travelling well; we have used a specimen as many as five or six times at different shows. For home growth its distinct colour claims for it a place in every collection.—*Mexico.*



EPIDENDRUM VITELLINUM
MAJUS.

FIG.—*Orchid Album*, i. t. 4; *Floral Mag.*, t. 261; *Jennings, Orch.*, t. 31; *Puydt, Lex Orch.*, t. 20; *Warner's Sel. Orch. Pl.*, iii. t. 27; *Veitch's Man. Orch. Pl.*, vi. p. 125; *Gard. Chron.*, 3rd ser., 1892, xii. p. 159, f. 29.

E. WALLISII, *Rehb. f.*—This wonderful species is comparatively new to our collections. It is one of those which do not form pseudobulbs, but instead produces tall leafy stems, several feet in height, which are spotted with brownish-purple, and clothed with distichous leaves. The peduncles are both lateral and terminal, and bear elegant drooping racemes of flowers, which intermingled with the foliage produce a most charming effect. The flowers are numerous and showy, about $1\frac{1}{2}$ inch across, and sweet-scented; the ligulate-oblong sepals and petals are rich golden yellow marked with small carmine-crimson spots; and the lip is broad, cuneately flabellate, white, with radiating feathery minutely tubercled lines of magenta-purple. It flowers during the months of October and November, and continues from three to five months in perfection.—*New Grenada.*

FIG.—*Orchid Album*, ii. t. 74; *Lindenia*, viii. t. 341; *Veitch's Man. Orch. Pl.*, vi. p. 126.

E. WENDLANDIANUM, Kränzlin.—A new species named in honour of Herr Wendland of Herrenhausen, near Hanover. "The flowers rise one to three on each flower-stalk, and are of a very bright colour. The sepals and petals are light green, the labellum is snowy-white, with dark purplish lines on the side-lobes; the gynostemium or column is likewise coloured dark purple. The diameter of the flower is nearly 2 inches; the labellum has two small side lobes, and a much larger cordate mid-lobe, with three elevated veins in the middle, and a hairy cushion at the base" (Kränzlin, in *Gardeners' Chronicle*, 3rd ser., 1893, xiv. p. 58).—*Mexico*.

E. XANTHINUM, Lindl.—A very handsome plant, flowering for a very long time; it belongs to the set which is destitute of pseudobulbs. Stem slender terete, some 2 or 3 feet high, and bearing distichous fleshy leaves, which are oblong and deep green. The umbel of flowers is terminal and many-flowered, sepals and petals somewhat oblong ovate, nearly equal, spreading, clear bright yellow; lip three-lobed, all deflexed, and prettily fringed with toothed edges, rich yellow, bearing an orange-yellow fleshy tubercle at the base. Blooms in the winter months.—*Caraccas*.

EPISTEPHIUM, Kunth.

(Tribe Neottieae, subtribe Vanilleae.)

A genus of terrestrial Orchids allied to *Sobralia*, from which it differs by the sepals being free, and surrounded at the base by a shallow-toothed calyculate rim, those of *Sobralia* being connate, and having no rim at the summit of the ovary. They are erect-growing, with rigid coriaceous nervose leaves, and showy flowers in terminal racemes. Some half-dozen species from Tropical South America are known to botanists.

Culture.—Being a terrestrial species, the crowns should not be elevated above the rim of the pot. They succeed best when potted in fibrous loam and sand, and must have good drainage as they require a liberal supply of water; they will do well in the *Cattleya* house.



EPISTEPHIUM WILLIAMSII.

E. WILLIAMSII, *Hook. fil.*—This beautiful and remarkable plant is so nearly allied to the *Sobralias*, that it was introduced under the name of *S. sessilis*. Its root consists of a tuft of fleshy underground fibres, and it grows upwards of 1 foot high; the stems are erect, 1 foot to 1½ foot high, with semi-amplexicaul leaves, very dark green and shining in the upper part, those on the lower part of the stem diminished; the flowers are large, six or eight on a terminal spike, of a bright mauve; the linear oblong sepals, the broader oblong petals, and the front margin of the lip wholly mauve colour; the roundish terminal lobe of the deeply bi-fid lip with a broad white space near the base, surrounded by a band of deep reddish-purple, the disk bearing a small crest of long yellow hairs.—*Bahia*.

FIG.—*Bot. Mag.*, t. 5485; *Batem. Second Cent. Orch. Pl.*, t. 103.

(**ERIOPSIS**, *Lindley*. (Tribe Vandeeae, subtribe Cyrtopodieae.)

A small genus of epiphytal Orchids, with pseudobulbous stems, long plicately venose leaves, and racemose flowers distinguished by their spreading sepals, by the large lateral lobes of the lip loosely enfolding the wingless column, while the middle lobe is much reduced and spreading, and by the collateral lamellae on the disk. Three or four species from Tropical South America are known.

Culture.—These plants succeed best potted in peat, with good drainage, and require a liberal supply of water at the roots, with full exposure to the sun; they are propagated by dividing the bulbs. The coolest house will suit them.

E. BILOBA, *Lindl.*—A showy evergreen species of a distinct aspect. It has elongate ovate terete pseudobulbs 3 inches long, with two or three broadly lanceolate plicate dark green leaves at the top, and throws up from the base a long erect dark purple peduncle bearing a raceme 1 foot high or more of numerous gaily-coloured flowers, which are about 1 inch across, and have a short chin; the sepals and petals are short, oblong, blunt, yellow with orange-red margins; and the lip is yellow, minutely spotted with brown, sub-cordate ovate, the front lobe much contracted and bluntly retuse, the disk bearing a crest of several collateral triangular lamellae, and the column green, semi-terete, bent down over the concave lip.—*New Grenada; British Guiana*.

FIG.—*Bot. Reg.*, 1847. t. 18.

SYN.—*E. Schomburgkii*.

E. RUTIDOBULBON, *Hook.*—A fine evergreen species, of larger and stouter habit than *E. biloba*. Its pseudobulbs are ovate, oblong, terete, much wrinkled on the surface, and of a purplish-black colour, surmounted by a pair, rarely three, broad lanceolate nervose leaves, and producing from the base of the pseudobulb a dark purple terete scape 1½ foot long, bearing a drooping raceme of

numerous handsome flowers; the sepals and petals are spreading oblong obtuse, dull orange-yellow with reddish-purple margins; the lip is about the same length, three-lobed, the disk striated and lamellate, with a dull crest, the broad lateral lobes involute, and the front lobe much smaller, orbicular, and obscurely emarginate, white with dark purple spots, the other parts dull orange-red dotted with dark purple. The individual flowers are nearly 2 inches across. — *Nier Grenada*: Antioquia, on palm stems fully exposed to the sun, elevation 4,000 to 5,000 feet.



ERIOPSIS RUTIDOBULBON.

FIG. — *Bot. Mag.*, t. 4437; *Pescatorea*, t. 20; *Annales de Gand*, 1849, t. 253; *Orchid Album*, viii. t. 377.

E. SCHOMBURGKII.—See *ERIOPSIS BILOBA*.

ESMERALDA, Rehb. f.

(Tribe Vandaceae, subtribe Sarcanthideae.)

A genus of epiphytal plants, with the habit of *Vanda*, having distichous coriaceous leaves, and stout aërial roots, indeed they have been grown for years as *Vandas*, but the flowers differ in not having a saccate formation to the lip, in being destitute of a spur, and in its being jointed to the column, which induced Reichenbach to separate them, but Bentham arranged them under the genus *Arachnanthe* of Blume. We, however, prefer the views of the great specialist of the family, and thus retain *Esmeralda*.

Culture.—The treatment and temperature for these plants should be the same as recommended for *Vandas*, saving for one species, and that is *E. Clarkei*, which grows naturally in Sikkim at some 5,000 feet elevation, where the temperature seldom reaches to 80° during the hottest part of the year, and in the dull season the thermometer would

show some few degrees of frost, so that for the greater portion of the year it grows well under cultivation in the cool house, but it requires a little more warmth during the growing and the flowering season, and at all times there should be a large amount of moisture in the air. The other species require in addition a large amount of heat, in fact the hottest part of the East Indian house, and a liberal addition of water to their roots, and at any season this should be given in sufficient quantity to preserve their leaves from turning yellow or shrivelling.

E. BELLA, *Rchb. f.*—A handsome species introduced by Mr. W. Bull, of Chelsea. Leaves broad, short, shining, unequally bi-lobed at the tips; the sepals and petals are light ochre-yellow in colour barred with pale brown; lip white, side lobes striped with purplish-brown, mid lobe bordered with brown.—*Himalayas*.

E. CATHCARTI, *Rchb. f.*—A tall scrambling but very distinct and noble species, somewhat resembling *Renanthera coccinea* in its general habit, but stouter. The leaves are arranged in a distichous manner, pale green, 6 or 7 inches long, linear-oblong, unequally bi-lobed at the tips, the lobes rounded; the flower-scape is erect, produced opposite the leaves, bearing four or five fleshy flowers 3 inches in diameter; the sepals and petals roundish oblong sessile concave, white externally, yellowish with numerous horizontal narrow often confluent bands of reddish-brown; the lip three-lobed, the small lateral lobes white with red streaks at the base, the middle lobe whitish with a crenate incurved yellow border, and the disk bearing two erect truncate calli; the thick prominent column is green. This species has now become established in our collections, but is rare.—*Sikkim Himalaya*, 2,000 to 4,000 feet, in hot places.

FIG.—*Bot. Mag.*, t. 5845; *Jennings, Orch.*, t. 10; *Flore des Serres*, tt. 1251-2; *L'III. Hort.*, t. 187; *Floral Mag.*, 2nd ser., t. 66; *Orchid Album*, iv. t. 168; *Hook. fl., Ill. Him. Pl.*, t. 23; *Gard. Chron.*, 1870, p. 1409, f. 251; *Veitch's Man. Orch. Pl.*, vii. p. 8; *Gardening World*, vii. p. 669.

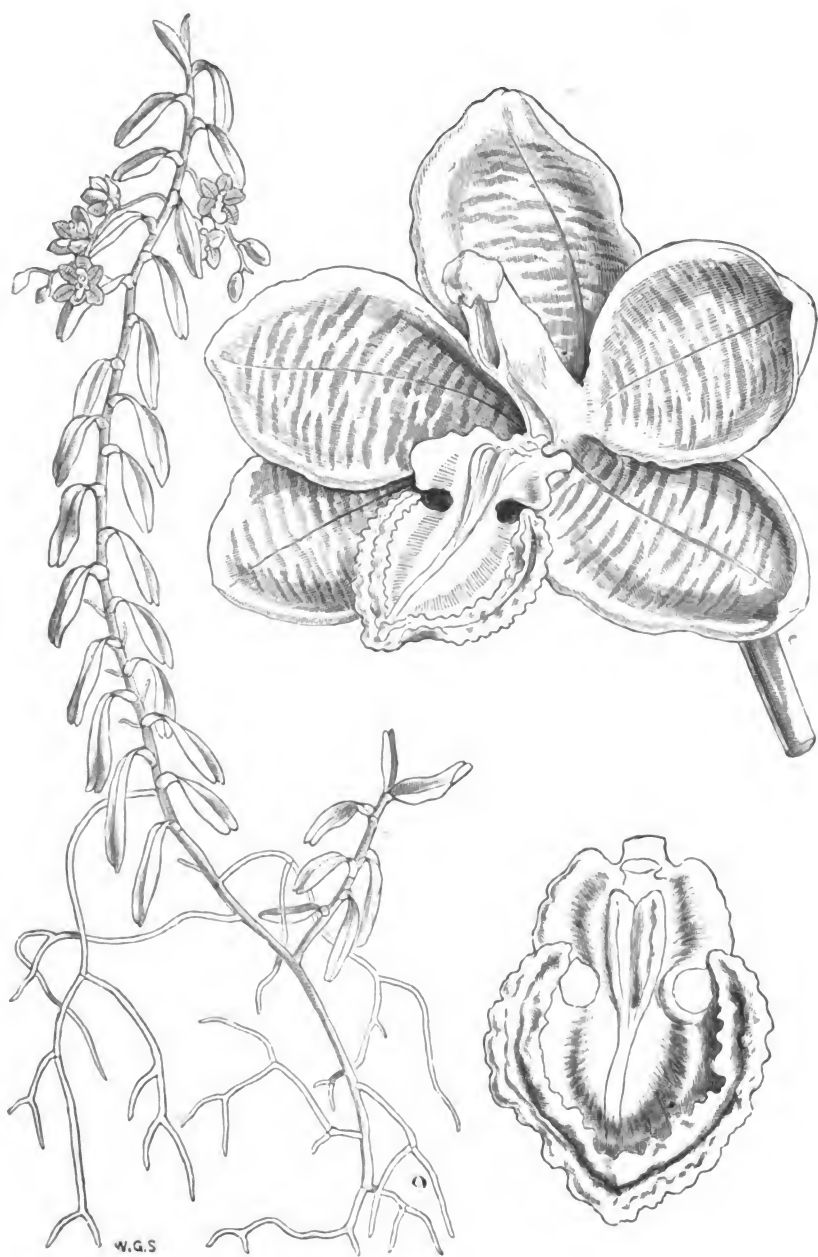
SYN.—*Vanda Cathcarti*; *Arachnanthe Cathcarti*.

E. CLARKEI, *Rchb. f.*—Allied to the preceding species, which it much resembles in habit; sepals and petals dark chestnut brown barred transversely with ochre-yellow; the lateral sepals curved, the petals narrower than the sepals; the lip resembles that of *E. Cathcarti*, somewhat whitish, with brown transverse streaks on the side lobes. It was discovered by Mr. C. B. Clarke, after whom it is named, and first flowered in the collection of the late John Day, Esq., of Tottenham.—*Sikkim*.

FIG.—*Bot. Mag.*, t. 7077; *Reichenbachia*, 2nd ser., ii. t. 65.

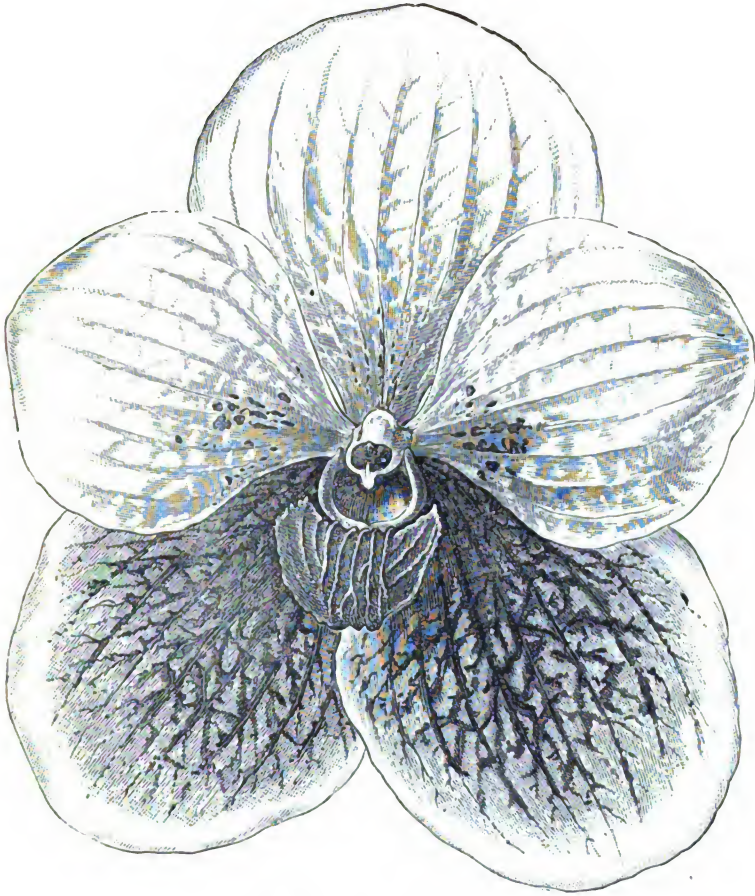
SYN.—*Vanda Clarkei*; *Arachnanthe Clarkei*.

E. SANDERIANA, *Rchb. f.*—One of the most wonderful and distinct Orchids that has been introduced for many years, and one which produces the largest flowers of any plant of the *Vanda* tribe known up to the present time. It was



ESMERALDA CATHCARTII.
(From the *Gardeners' Chronicle*.)

first flowered by W. Lee, Esq., Downside, Leatherhead. The growth resembles that of *Funda coerulea*, but the stem is stouter and larger in all its parts, and more densely leafy; the leaves are broadly ligulate rigid leathery recurved, from 9 to 12 inches long and 1 inch broad, deeply channelled, and having the usual distichous arrangement; the racemes are axillary and many-flowered, the largest on Mr. Lee's plant bore twelve blossoms; the flowers themselves are spread out flat, and



ESMERALDA SANDERIANA.

(From the *Gardening World*.)

are about 4 inches in diameter; the dorsal sepal is roundish obovate, and the smaller petals are obovate-cuneate, all these being blush-pink slightly stained with buff-yellow; the lateral sepals are much larger and broader, being about 2 inches across, divergent, obliquely and broadly obovate, pale nankin outside, greenish-yellow, distinctly reticulated with dull crimson over the entire surface; the lip is small, concave, pale purplish-red at the base, the strongly recurved tip chocolate-

purple, and with three prominent keels extending from the base to the apex. It flowers in September and October.—*Philippine Islands: Mindanao.*

FIG.—*Orchid Album*, iii. t. 124; *L'Illustr. Hort.*, 3rd ser., t. 532; *Gard. Chron.*, N.S., xx. p. 440. f. 67–68 (habit and inflorescence); *L'Orchidophile*, 1884, p. 109 (plate); *Reichenbachia*, ii. t. 62; *Bot. Mag.*, t. 6983; *Veitch's Man. Orch. Pl.*, vii. p. 105 *Journ. of Hort.*, 1892, xxiv. p. 469, f. 80.

SYN.—*Vanda Sanderiana*.

E. SANDERIANA ALBATA, *Rehb. f.*—This variety has the upper sepal and petals white, with a few purple spots at the base; the petals pale yellow at the base, lateral sepal veined and spotted with red.

E. SANDERIANA LABELLO-VIRIDI, *Lind. et Rod.*—A variety with a green lip striped with crimson, in other respects like the type.

FIG.—*Lindenia*, i. t. 40.

EULOPHIA, Robert Brown.

(Tribe Vandeeae, subtribe Eulophiceae.)

A genus of terrestrial Orchids, having leafy stems, which sometimes become thickened into pseudobulbs at the base, the leaves distichous and plicately nerved, and in the genuine species producing leafless scapes from the base of the stem, some few anomalous species, however, flowering from the apex of the leafy stem. Among the Vandaceous genera with pseudobulbs and plicate leaves, its chief peculiarity is the presence of a gibbose sac or spur at the base of the lip. The fifty species which are known are most abundant in Tropical and South Africa, the others occurring in Tropical Asia, with one or two in Australia, and an erratic species appears to have been found in Brazil.

Culture.—Of this large genus there are not many species in cultivation; indeed, the greater portion are not sufficiently showy to render them worthy of the attention of amateurs with limited space, yet there are some very pretty ones. They are best grown in pots, in a compost of good fibrous loam, leaf soil, and sand, with the addition of a little charcoal. The temperature of the *Cattleya* house will be found to suit them best. Propagation is effected by separating the pseudobulbs.

E. DREGEANA, *Lindley*.—This species, which flowered in the collection of Lord Eversley, at Heckfield, is well worth growing. It has thick fleshy rhizomes, and is of free habit, with ensiform acuminate leaves, and erect scapes bearing many-flowered dense racemes of flowers which resemble little doves hanging by their beaks; the sepals and petals are chocolate colour, and the oblong three-lobed lip white. It will do in a frame or greenhouse, and requires similar treatment to the terrestrial *Cypripediums*.—*South Africa.*

E. GUINEENSIS, *Loddiges*.—This is unquestionably the most ornamental species in cultivation, the others which we have seen, several in number, all

producing inconspicuous flowers. The bulbs of *E. guineensis* are broadly pear-shaped, from 1 to 1½ inch in height, and from their crown proceed two leaves which are elliptic-lanceolate, plicate, and stalked; the flower scape is erect, 3 feet high, produced from the base of the pseudobulb, and terminates in a raceme of from seven to twelve flowers; the individual flowers are about 2½ inches in diameter, the sepals and petals dull purplish-green, the lip large, three-lobed, the middle lobe very blunt, undulated, white with crimson stripes at the base, the lateral lobes rolled and the spur subulate. It flowers in September and October.—*West Tropical Africa*.

FIG.—*Loddiges, Bot. Cab.*, t. 818; *Bot. Mag.*, t. 2467; *Bot. Reg.*, t. 686.

E. GUINEENSIS PURPURATA, *Rehb. f.*—A very rare and beautiful variety of *E. guineensis*, having flowers much richer in colour than in the ordinary forms; sepals and petals deep rosy-purple, lip rich bright magenta, traversed by deep crimson veins; the pseudobulbs are roundish ovate, and the somewhat plicate leaves are oblong-acuminate, 6 inches long, narrowed below into a petiole; the scapes, which rise from the base of the bulbs, are a foot or more in height, and bear racemes of seven to ten pedicellate spurred flowers; the sepals and petals are linear-acuminate, deep rosy-purple, all directed upwards, and the broad roundish-ovate pointed front lobe of the lip is of a bright magenta, traversed by crimson flabellate veins, which become deep rosy-purple as they converge towards the base, the extreme base being white, and the short blunt side lobes bluish; the slender spur is deep purple, and the column rosy-purple. It is a charmingly beautiful, richly coloured plant.—*West Tropical Africa*.

FIG.—*Orchid Album*, ii. t. 89.

E. MACULATA, *Rehb. f.*—An interesting species from the Congo. The pseudobulbs are ovate compressed, one-leaved; leaves elliptic-ovate, leathery green, barred transversely with silvery maculations; the scape is produced from the base of the pseudobulbs, carrying at the top a many-flowered raceme; the dorsal sepal is hood-shaped, the lateral ones acuminate, reddish-brown; petals lanceolate acute, white; lip broadly cordate, white with two triangular scarlet marks at the base.—*Congo*.

FIG.—*Bot. Reg.*, t. 618; *Gartenflora*, 1888, t. 1285.

SYN.—*Angraecum maculatum*.



EULOPHIA GUINEENSIS PURPURATA.

E. SAUNDERSIANA, *Rehb. f.*—A curious and interesting species, from the West Coast of Africa, sent to Kew by Gustav Mann. The pseudobulbs are pear-shaped, two-leaved; leaves acuminate, dark green, shining; scape erect, many-flowered; the colour of the flowers reminds one of *Coelogyne pandurata*, being a lovely green, marked with black or purple-black; lip four-lobed, paler green, with radiating black marks on each lobe. Named in honour of W. Wilson Saunders, Esq., of Reigate, who flowered and exhibited it at a meeting of the Royal Horticultural Society.—*West Coast of Africa*.

FIG.—*Xenia Orch.*, ii. t. 173.

EULOPHIELLA, *Rolfe*.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

A new genus containing but one known species from Madagascar, which, according to Mr. Rolfe, appears to be terrestrial; we ourselves have little knowledge of it, as at the time of writing our imported plants are just starting into growth. It is described as being allied to *Govenia*, with certain characters suggesting its affinity with *Zygopetalum* and *Aganisia*.

Culture.—This plant should be cultivated in a pot, in a compost of good fibrous loam, leaf soil, and sand, with some nodules of charcoal added, and be placed at the warmest end of the East Indian house.

E. ELISABETHAE, *Linden et Rolfe*.—This fine novelty has recently been introduced by the Horticulture Internationale of Brussels, and was exhibited by them in their collection of new plants at the International Horticultural Exhibition held in Ghent in April, 1893. The growth resembles that of *Phajus tuberosus*. The stems (pseudobulbs) are fusiform, elongate, and covered with the fibry remains of the old leaf-sheaths, annularly disposed; leaves elliptic, deep green, plicate; raceme many-flowered, produced from the base of the young growths, about 1 foot in length; stalk deep reddish-purple in colour, as are also the exteriors of the sepals and the unexpanded buds, forming a marked contrast to the pure white of the flower segments; flowers nearly round in outline, 2 to 2½ inches in diameter; sepals and petals broadly obovate, fleshy, pure white; lip large, three-lobed, delicately articulated with the base of the column, oscillating when touched; white in colour, disk of anterior lobe bright yellow. It is dedicated to Queen Elisabeth of Roumania.—*Madagascar*.

FIG.—*Lindenia*, vii. t. 325; *Gardening World*, ix. p. 708; *Journ. of Hort.*, 1892, xxv. p. 255, f. 35.

GALEANDRA, *Lindley*.

(Tribe Vandeeae, subtribe Eulophieae.)

Some of the species belonging to this genus are small-flowered, and possess little beauty to attract the attention of amateurs; a few, however, have large and beautifully coloured blossoms, and are well deserving general cultivation. They are deciduous terrestrial or epiphytal plants,

with erect slender distichous plicate leaves, becoming consolidated at the base into tuberiform or elongated stems, which produce their racemose inflorescence from the top, just as they have finished their growth. Their flowers are peculiar in the lip assuming the form of a broad funnel-shaped spur. Some half-dozen species from Tropical America are described.

Culture.—These plants are best grown in pots, with peat and good drainage, in the East Indian house, and should have a good supply of water at their roots during their period of growth. Afterwards they should be moved into the *Cattleya* house, and placed near the glass, but not kept too dry. When growth commences they should be replaced in the East Indian house, and be freely supplied with water. *Galeandras* are somewhat difficult to cultivate, and in the growing season require strict attention in regard to keeping their leaves free from the red spider and the thrips, which may be done by carefully syringing the plants twice a day in warm weather.

G. BAUERI, *Lindl.*—A desirable dwarf epiphytal species, growing about 1 foot high, the young stems leafy with a bulbiform base, growing up and developing the drooping corymbiform inflorescence from the apex; as these stems become matured they form at the base an ovate-acuminate pseudobulb; the leaves are several in number, lanceolate, and three-nerved, and the peduncles are clothed with linear-lanceolate sheathing leafy bracts; the sepals and petals are linear-oblong acute, all spreading or directed upwards, brownish-green, the two petals darkest, and the lip large, rolled round the column, the front lobe emarginate and crenulate, purple in front, white exteriorly, the base extended into a narrow extinguisher-shaped spur; the colour of the flowers varies in brightness; the blossoms are produced in the months of June, July, and August, and continue in perfection a long time. This makes a fine plant when well grown, and it is worth all the care that can be bestowed upon it. When Mr. Schröder's collection was intact, he invariably exhibited this plant in splendid condition at Chiswick; we have never seen it so good since, which is to be regretted. Indeed it is now a rare plant, but we trust we may soon get some fresh importations.—*French Guiana; South Mexico; Guatemala.*

FIG.—*Bot. Reg.*, 1840, t. 49; *Paxton, Mag. Bot.*, xiv. p. 49 (with fig.); *Bauer, Ill. Orch. Pl.*, t. 8; *Batem, Orch. Mex. et Guat.*, t. 19 (icon. phantastica); *Puydt, Les Orch.*, 196, f. 193; *Orchid Album*, vi. t. 267.

G. CLAESII, *A. Cogniaux*.—This new species has cylindrical pseudobulbs 12 to 18 inches long, and furnished with greyish scales spotted with brown. Inflorescence about 9 inches long, issuing from the apex of the pseudobulbs; sepals and petals green suffused with vinous purple; the lip is obtuse, vinous purple near the extremity passing to a greenish yellow near the spur, covered with purplish bands outside; the base of the lip is covered with three parallel crests.—*Brazil.*

FIG.—*Lindenia*, ix. t. 391.

G. CRISTATA, *Lindl.*—A desirable dwarf-growing species, about 8 inches high, with the habit of *G. Devoniana*. The flowers, which are produced in a drooping raceme, are, however, much smaller, and of a pink and dark purple colour; they have the linear-lanceolate sepals and petals reflexed, and the lip convolute, crisped at the edge and pubescent within, with two keels at the base; the spur is acuminate, horizontal, and the anther has a peculiar rhomboid purple crest mounted on a white shaft. These flowers appear in July and August, and last four or five weeks in perfection.—*Cayenne*.

G. DEVONIANA, *Lindl.*—A beautiful epiphytal Orchid of slender habit, growing about 2 feet high—5 to 6 feet in its native haunts. The stems are erect, terete, and when young have many leaves, which are lanceolate, sheathing, and three-nerved; the blossoms, which are produced in pendent racemes from the top of the stems, have ascending lance-shaped sepals and petals of a darkish purple with green margins; the lip is large, broadly obovate, the sides meeting over the column, the front projected forward, white, the apex thickly striped and pencilled with purple, the disk bearing four lamellae, and the spur at the base being green and recurved. It blooms at different times of the year, and remains a long time in beauty.—*Rio Negro; British Guiana; U.S. of Colombia*.



GALEANDRA DEVONIANA.

FIG.—*Lindley, Ser. Orch.*, t. 37; *Bot. Mag.*, t. 4610; *Batem, Second Cent. Orch. Pl.*, t. 152; *Warner, Ser. Orch. Pl.*, i. t. 37; *Paxton, Mag. Bot.*, viii. p. 145, with tab.; *L'Illustr. Hort.*, t. 176; *Maund, Bot.*, v. t. 231; *Lew. Jard. Fl.*, t. 195; *Veitch's Man. Orch. Pl.*, ix. p. 8.

G. DEVONIANA DELPHINA, *Linden et Rodigas*.—A superior variety with brighter coloured flowers, having the lip larger and covered with interrupted rosy-purple lines. Named in honour of *Madame Rodigas*, wife of the learned director of the *Ecole d'Horticulture de l'Etat* in Ghent.—*Venezuela*.

FIG.—*Lindenia*, ii. t. 80.

G. DIVES, *Rehb. f.* A very pretty dwarf-growing epiphytal species, with stout erect cylindrical stems, lanceolate acuminate leaves, and flowers produced from the top of the stems in drooping racemes in August and September; the sepals and petals are sub-equal lanceolate acuminate, reddish-brown, and the lip transversely rhomboid, retuse in front, creamy white, suffused with pink, and produced into a large extinguisher-shaped spur behind. In the *Botanical Magazine* figure referred here by Reichenbach, the flowers are yellow, with the front part of the funnel-shaped lip for about one-third its length marked by sanguineous lines.—*Tropical America: New Grenada*.

FIG.—*Bot. Mag.*, t. 4701 (as *Baueri*).—*f. Rehb.*

G. FLAVEOLA, *Rehb. f.*—A distinct species introduced by the Horticulture Internationale, and described as follows by the late Professor Reichenbach:—"It is strong in its habit; the stem exceeds a span, and is rather thick towards



GALEANDR
(From the *Garde*)



A NIVALIS.
ners' Chronicle.)

the base; leaves cuneate, linear acuminate, attaining $\frac{1}{2}$ inch in breadth, the uppermost ones are smaller; the reddish peduncle is bent aside, and bears a raceme of eight flowers of unusual colour; sepals and petals lanceolate-acuminate, yellowish with a sepia tint; lip yellow with very small hyaline-purple dots, scattered in lines on the side lobes and the front lobe" (*Gardeners' Chronicle*, 3rd ser., 1887, i. p. 512).—Venezuela.

FIG.—*Lindenia*, ii. t. 90.

G. HARVEYANA, *Rehb. f.*—This is a pretty novelty, named in honour of the late E. Harvey, Esq., of Riversdale Road, Aigburth, Liverpool, once a great enthusiast in Orchid culture. In its habit of growth the plant resembles *G. Devoniana*. The flowers grow in short racemes, and have cuneate-oblong sepals and petals of a sepia-brown colour, and a light yellow lip, with a tuft of hair on the anterior portion of the disk; the lip is dilated in front, and parted into three obtuse lobes, and at the base is extended into a slightly curved spur; the column is bordered on each side with mauve.—*Tropical America*.

G. NIVALIS, *Hort.*—This is a very rare and distinct epiphytal species, and has been recently flowered by Sir Trevor Lawrence, Bart. It has slender erect fusiform glaucous stems, long narrow lanceolate grassy leaves, and drooping racemes of rather pretty flowers, which are produced in March, each about 2 inches in length, and having narrow reflexed rich olive-coloured sepals and petals, and a white lip, funnel-shaped at the base, the front lobe broad, flat, expanded and emarginate, and marked with a large central violet-coloured blotch.—*Tropical America*.

FIG.—*Gard. Chron.*, N.S., xvii. p. 537, f. 85; *L'III. Hort.*, xxxii. t. 545; *Veitch's Man. Orch. Pl.*, ix. p. 9; *Gard. Chron.*, 3rd ser., 1892, xii. p. 431, f. 70.



GONGORA, Ruiz et Pavon.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

This genus is somewhat despised by Orchidists, yet it contains some very interesting and free-flowering species, which, as nearly all of them are fragrant, have a claim to our attention. They are compact-growing evergreen pseudobulbous epiphytes, each bulb having two broad plicate leaves contracted into a stalk-like base, and they bear long drooping racemes of singular grotesque-looking richly coloured flowers on scapes which spring from the base of the pseudobulbs. The flowers have the petals and the erect dorsal sepal adnate with the back and sides of the column, and a very peculiar hollow fleshy lip, having two or more awns or horns from near its base. About a score of species are known, all Tropical American.

Culture.—In the earlier days of Orchid culture one often saw fine specimens of *Gongora*, but latterly they seem to have become quite

neglected, though they bear a really elegant inflorescence, and are of varied and attractive colours. As the flower spike is pendulous and produced from the base of the pseudobulbs, the plants are best grown in baskets with peat and moss; indeed the spikes are extremely liable to injury if grown in pots. The temperature of the cool end of the *Cattleya* house suits them well; they enjoy a liberal supply of water during summer, both on the foliage and at the roots, but a very little will suffice in winter, though even then the pseudobulbs should not be allowed to shrivel.

G. ARMENIACA.—See *ACROPERA ARMENIACA*.

XG. ATRO-PURPUREA, Hook.—An old but pretty species, compact in growth, with oblong-cylindrical ribbed pseudobulbs, bearing at the top two large ovate-lanceolate light green leaves, and from the base very long drooping racemes of numerous dark purple-brown or chocolate-coloured purple-spotted flowers, which are produced during the summer months; the flowers are peculiar in form, the sepals lanceolate, the upper one springing from the back of the column smaller



GONGORA ATRO-PURPUREA.

than the other two, which are spreading; the petals are quite small, incurved, fixed near the base of the upper sepal and some distance above the lateral ones; the lip is nearly an inch long, standing out at a right angle with the rest of the flower; at the base is a cylindrical claw, above which are four horns, two obtuse and two acuminate; the apex is laterally compressed, acuminate, forming a

vertical plate, double at its upper edge and gibbous at its base; the column is very long, curved, broadest upwards, semi-cylindrical, bearing on its back and sides the upper sepal and the two petals; the pedicels are purple.—*Trinidad*.

FIG.—*Bot. Mag.*, t. 3220; *Hook. Exot. Fl.*, t. 178; *Maund, Bot.*, iii. t. 108; *Hook. First Cent. Orch. Pl.*, t. 59.

G. BARBATA, *Lemaire*.—This is a rare and pretty species. It thrives well upon a block of wood. Pseudobulbs fusiform, closely-jointed, clothed with numerous large ovate sheathing bracts; leaves distichous, linear-lanceolate, deep green above, almost white beneath; scape terminal, nodding, bearing a raceme of from two to five flowers; flowers showy, sepals and petals erect, rich olive-brown; lip very long and narrow, convolute, forming a long tube, which runs out at the base into a long conical spur, basal part of the lip rosy-pink, front portion white, tipped with rosy-pink, and bearing on the disk numerous rosy-pink crested protuberances. Flowers in the summer months.—*West Indies*.

FIG.—*L'Il. Hort.*, vii. t. 248.

G. BUFONIA, *Lindl.*—An interesting species resembling *G. maculata* in its mode of growth, having both the pseudobulbs and leaves of a pale whitish-green. The flowers in this species are of a dull pale wine-purple, very irregularly stained and spotted on an obscure yellowish-white ground, and bear a pair of long setaceous bristles on the hypochil; the pedicels are purple. The variety *major* has larger flowers than those of the type.—*Brazil*.

FIG.—*Bot. Mag.*, 1841, t. 2.

G. CHARLESWORTHII, *Rolfe*.—"Habit of *G. truncata*. Leaves broadly plicate, about 1 foot long by $2\frac{1}{4}$ inches broad; scape arching, about $1\frac{1}{2}$ foot long, sixteen to twenty-flowered." The flowers are described as "nearly white, barred with a very light brownish-purple of a peculiar shade on the sepals" (*Orchid Review*, i. p. 198). It was exhibited by Messrs. Charlesworth, Shuttleworth, & Co., at the Temple Show in May, 1893.—*Native country not stated*.

G. FLAVEOLA, *Rehb. f.*—"This *Gongora* is near to *G. gratulabunda* and *G. pleiochroma*. It bears a rich raceme of distinct flowers, which are light ochre-yellow; the lip darker, more yellow; column green; there are brown spots on the base of the long narrow median sepal, and on the petals, lip, and column; the peduncle is angulate, by no means compressed. It was grown and kindly presented to me by Mr. J. O'Brien, of Harrow-on-the-Hill" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1886, xxvi. p. 456).

G. GALEATA.—See *ACROPERA LODDIGESII*.

G. JENISCHII.—See *G. ODORATISSIMA*.

G. MACRANTHA.—See *CORYANTHES MACRANTHA*.

✓ **G. MACULATA**, *Lindl.*—This rather handsome plant grows about 18 inches high, and has ovate-oblong strongly-ribbed pseudobulbs, dark green five-nerved broadly lanceolate leaves, and long drooping racemes upwards of a foot in length, and produced from the base of the bulbs, of elegant flowers, which are of a clear yellow with bright reddish-brown bars and spots, and very showy, the

whole of the parts of the flower being similarly spotted; the sepals are lanceolate acuminate, which gives the flowers a very light and pleasing character; the pedicels are of a pale purple; it blooms in May.—*Demerara; Surinam; Peru; Guatemala.*

This plant appears to be very variable according to Reichenbach, who places it under *G. quinquenervis* of Ruiz and Pavon, and includes with it *G. fulva*, *G. fulva vitellina*, *G. bufonia leucochila*, and *G. leucochila*.

FIG.—*Bot. Mag.*, t. 3687; *Bot. Reg.*, t. 1616; *Id.*, 1847, t. 17 (*bufonia leucochila*); *Id.*, 1839, t. 51 (*fulva*); *Flore des Serres*, t. 37 (*leucochila*); *Hook. First Cent. Orch. Pl.*, t. 70; *Lindenia*, v. t. 208.

SYN.—*G. quinquenervis*.

G. MACULATA ALBA, *Lindl.*—A handsome and distinct form of the preceding species, which it very much resembles, but the pseudobulbs are more deeply ribbed; the flowers, which are pure white, with a few spots of rose on the lip, are produced about the month of May.—*Guiana.*

G. MACULATA TRICOLOR.—See *G. TRICOLOR*.

G. ODORATISSIMA, *Lem.*—This showy species has oval deeply furrowed pseudobulbs, broadly lanceolate plicate leaves, and long green peduncles bearing many-flowered drooping racemes of large spreading and showy flowers of a clear yellow colour, richly and heavily blotched and mottled with bright reddish-brown, which is of a darker hue towards the edges and points; the pedicels are green; the upper sepal and petals are adherent to the back and sides of the curved column, while the lip is continuous with its base, clawed, the basal part (hypochil) arched and laterally compressed with a pair of petaloid processes on the back, truncate above, with two angles bearing thread-like processes, while the upper part (epichil) is acutely elongate ovate, the sides folded together face to face, attenuated to a point.—*Venezuela.*

FIG.—*Flore des Serres*, t. 229; *Gard. Mag. Bot.*, 1850, ii. 73 (*Jenischii*).

SYN.—*G. Jenischii*.

G. PORTENTOSA, *Lind. et Rehb. f.*—A compact-growing large-flowered handsome species, with oblong-ovate furrowed pseudobulbs 3 inches high, broadly lanceolate acute nervose leaves, and long drooping racemes of long-stalked yellow flowers from the base of the pseudobulbs. The dorsal sepal is ligulate acute, the lateral ones oblong apiculate, all buff-yellow, spotted faintly with purple; the petals are fleshy, linear falcate, white dotted with purple, and the lip is compressed, deep yellow, the hypochil having two retrorse awns near the base of the two dolabriform laminae, which fold up to form a hollow, with a straight linear horn at the summit. The flowers have the parts more or less dotted with minute purplish or dull red spots; the pedicels are greenish straw-colour.—*New Grenada.*

FIG.—*L'Illust. Hort.*, 3rd ser., t. 61.

G. QUINQUENERVIS.—See *G. MACULATA*.

G. SPECIOSA.—See *CORYANTHES SPECIOSA*.

G. TRICOLOR, *Rehb. f.*—One of the handsomest of the *Gongoras*, having oblong-ovate thickly-ribbed pseudobulbs, bold plicate leaves, and fine stout drooping racemes of bright-coloured flowers of comparatively large size. The dorsal sepal, affixed half-way up the back of the column, is lanceolate, and as well as the lateral ones, which are obliquely triangular, broad at the base, narrowing upwards, deep bright yellow heavily spotted and blotched with rich sienna-brown; the petals are small, narrow, pale yellow, lightly spotted; the lip is prettily marked, the hypochil being white, oblong, convex, and two-horned at the base, the front truncate, with acute angles extended into two long awns, white with one or two dark brown spots, and the epichil acuminate, stained on the sides with cinnamon (bright rose in the figure); the pedicels are purple.—*Panama or Peru.*

FIG.—*Bot. Reg.*, 1847, t. 69.

SYN.—*G. maculata tricolor.*

G. TRUNCATA, *Lindl.*—A fine and very distinct species, with light-coloured flowers of full average size. The habit of the plant as regards the pseudobulbs, foliage, and inflorescence resembles that of the other species. The chief peculiarity is in the flowers, which are whitish or straw-coloured, marked by a few brownish-purple transverse freckles, the lip being a clear varnished yellow. The dorsal sepal is obovate carinate, the lateral ones roundish oblong, and so blunt-ended that the buds before expansion resemble a bean in form; the petals are small and the lip is curved, the hypochil compressed in the middle, and bearing a pair of awns in front, while the epichil, or anterior portion, is ovate and channelled, and when turned up is suggestive of the form of the front part of a gondola; the pedicels are mottled purple.—*Mexico.*

FIG.—*Bot. Reg.*, 1845, t. 56; *Ann. de Gand*, 1848, t. 205.

GOODYERA, Robert Brown.

(Tribe Neottieae, subtribe Spirantheae.)

An interesting genus of dwarf growing plants, with compact fleshy stems, and much of the general character and aspect of *Anoectochilus*, which they also resemble in the dark velvety green leaves which many of them possess, and which in some cases are marked by silver or golden lines. The flowers have the dorsal sepal and petals connivently galeate, and the sessile lip has the small lamina undivided. The plants have thick fleshy roots, and push from underground stems, forming neat dwarf tufted plants. The flower spikes, which issue from the centre of the foliage, attain a height of from six to ten inches, some of the kinds bearing delicate white flowers, which are very useful for bouquets, as well as for other purposes. The genus contains many species, which are widely distributed, occurring in Europe, Madeira, North America, Temperate and Tropical Asia, New Caledonia, and the Mascarene Islands.

Culture.—Some of the *Goodyeras* are of easy culture, while others are difficult to manage, but with care they may all be had in perfection, and when this is attained, they amply repay the trouble bestowed upon them. If grown in small pots, and intermixed with different forms of *Anoectochilus*, they have a fine appearance, the foliage of the *Goodyeras* forming a beautiful contrast with them; they do not, however, require the same attention, but, on the contrary, will do in any close house where there is a little warmth. The soil we use is peat and sand, with a little loam, and we give a liberal supply of water to the roots during the growing season. They are propagated by cutting up the plants so as to have a portion of root attached to each piece of the stem. They may be grown where there is no Orchid house, as a mixed stove suits them perfectly, or some of the sorts may be cultivated in a greenhouse or frame. For further particulars see *Anoectochilus*.

G. DAWSONIANA.—See *HAEMARIA DAWSONIANA*.

G. DISCOLOR.—See *HAEMARIA DISCOLOR*.

G. DOMINII, *Hort.*—A beautiful hybrid, raised in Messrs. Veitch's nursery, and as regards foliage one of the best forms we have seen. The leaves are larger than those of *Haemaria discolor*, having a dark bronzy velvet-like appearance, with several prominent lines running their whole length, of a lightish colour—nearly white, and interspersed with smaller veins. It is a useful addition to this class of plants, as it forms a good contrast with *Anoectochilus*.—*Garden hybrid*.

G. JAPONICA, *Hort.*—This is a very rare plant in cultivation in this country, and we believe it has never been found in a wild state in Japan. It was obtained from a garden and sent to England, where it was thought its handsome *Anoectochilus*-like foliage would find for it many admirers. The leaves are stout and oblong ovate, ground colour rich velvety green, tinged with olive-brown, the mid rib being broadly striped with silvery white, which is suffused with rosy-pink when the leaf is young.—*Japan*.

G. MACRANTHA, *Maximovicz.*—A very neat and pretty dwarf-growing terrestrial Orchid, and a valuable acquisition to the cool house. The leaves are dark velvety green with a pale green central band, and beautifully netted over the surface with a lighter shade of the same colour, the under surface being pale green. The flowers grow in short terminal spikes of two or three together, and are about 1 inch long, of a pretty rosy-pink colour, the petals and lip white. It belongs to the section *Georchis*, which has a cylindraceous tubulous perianth, with all the parts—sepals, petals, and lip—linear, the upper one united with the petals.—*Japan*.

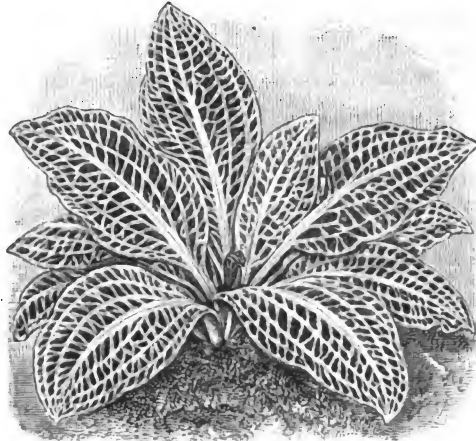
G. MACRANTHA LUTEO-MARGINATA, *Maxim.*—Is a very choice variety, in which the leaves have, besides the elegant reticulation, a distinct and effective marginal band of creamy yellow.—*Japan*.

FIG.—*Flore des Serres*, tt. 1779, 1780; *Gartenflora*, t. 533, f. 2; *Florist and Pom.*, 1867, p. 227, with fig.; *Gard. Chron.*, 1867, p. 1022, with fig.

G. ORDIANA.—See *HAEMARIA DISCOLOR ORDIANA*.

G. PICTA, *Hort.*—A distinct species, growing about 3 inches high. The leaves are $1\frac{1}{2}$ inch long, light pea-green, with a paler band running through the entire leaf. We have not seen it in flower, but it is worth growing on account of its foliage. A rare plant, whose roots are not so thick as those of some other kinds, and which therefore requires more care in its cultivation.—*Native country not known*.

G. PUBESCENS, *R. Br.*—A charming dwarf evergreen species, with a tuft of ovate dark green leaves marked with a silvery white costa, and closely reticulated with paler veins, so that in appearance it is something like *Physurus argenteus*. The flower scape rises from the centre of the leaf tuft, about 8 or 10 inches, and on its upper half is thickly furnished with small white flowers, which though not showy are pleasing. It is, however, well worth growing for its beautiful foliage; the plant requires a cool house or pit to grow it in perfection; it is not difficult to manage, but requires great care, as it is often destroyed by being placed in too great heat. It should be grown in pots, not too large, giving a liberal supply of water during the growing season; in fact, it should never be allowed to get dry at the roots.—*North America*.



GOODYERA PUBESCENS.

FIG.—*Flore des Serres*, t. 1555; *Lindl. Coll. Bot.*, t. 25; *Sweet, Brit. Fl. Gard.*, 2nd ser., i. t. 47; *Lodd. Bot. Cab.*, t. 1.

G. RODIGASIANA, *L. Linden.*—This is a distinct plant of dwarf robust habit, having somewhat thick fleshy leaves, which are ovate-lanceolate and velvety, pale green, broadly striped in the centre with white.—*New Guinea*.

FIG.—*L'Il. Hort.*, t. 616.

G. ROLLISSONI, *Gower.*—A most distinct and beautiful species. It was originally imported by Messrs. Rollisson & Son, of Tooting, but of its native country nothing is known, as the original plant came up in the mixed débris of several importations. It is a strong growing plant, with large ovate, cordate leaves which are rich dark green, irregularly margined, striped, and blotched.

with pale yellow on the upper side, sometimes tinged with a bronzy hue, whilst below they are of a rich velvety purple. A most desirable plant, and one that should be in every collection.—*Native country not known.*

G. RUBROVENIA, *Hort.*—A charming and distinct species, having the habit of *Haemaria discolor*. It grows several inches high, and has bronzy velvet-like foliage, with three bands of coppery red down each leaf; it has thick fleshy roots, and is of easy culture under bell-glasses or in frames. We have grown it along with *Anoetochili* for several years on account of its foliage, but it will do in a pot with the same treatment as is usually given to the *Haemarias*.—*Brazil.*

G. TESSELLATA, *Lodd.*—A neat and pretty plant with the aspect of *G. pubescens*, but of smaller growth, whence it has been called *G. pubescens minor*. It is a dwarf evergreen species, with ovate leaves tapered into a stalk, the green surface beautifully marked with pale green or whitish reticulations. The flowers are white, produced in slender erect spikes. It should be treated like *G. pubescens*.—*North America.*

G. VEITCHII, *Hort.*—A hybrid of vigorous habit, raised by Messrs. Veitch between *G. discolor* and *Anoetochilus Veitchii*; the leaves are of a rich deep reddish-brown colour, marked with a few silver ribs.—*Garden hybrid.*

G. VELUTINA, *Mazim.*—A handsome and striking dwarf evergreen species, with ornamental foliage, and well adapted for the cool house. It has deep purplish bottle-green velvety ovate leaves, marked with a very distinct central bar of silvery white, and purple on the under side; the flowers are small, in ten-flowered spikes, and of a cheerful rosy-pink colour. It is robust though dwarf and compact in habit, and of free and easy growth.—*Japan.*

FIG.—*Flore des Serres*, t. 1779; *Gartenflora*, t. 533, f. 1.

GOVENIA, Lindley.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

A small genus of terrestrial Orchids, some few of which are of sufficient interest and beauty to be worthy of a place in collections of these plants. They are herbs, with tuberiform rhizomes, from which grow up the erect stems, bearing a few leaves, and crowned by a raceme of numerous flowers of medium size, which are singular in form and prettily marked; the sepals are connivent, the lateral ones falcate or decurved, and with the foot of the winged column forming a short mentum or chin; and the lip, which is articulated with the foot of the column, is undivided. About a dozen species are known, natives of Mexico, Brazil, and the West Indies.

Culture.—These plants should be grown in the cool house, in a mixture of loam and leaf-mould with a little sand added. After their

growth is finished give them a good season of rest, and keep dry till they begin to grow.

G. DELICIOSA, *Rehb. f.*—A rather pretty species, quite distinct in character from any other Orchid. It has a tuberous root-stock, from which proceeds an erect stem $1\frac{1}{2}$ foot in height, furnished with two lanceolate acuminate nervose leaves about 9 inches long, the bases of which are enclosed with that of the stem in a pair of basal bracts; at the top of the stem is a raceme of six or eight bracteated flowers, whose pedicels are dull red, the flowers themselves being white, with oblong-lanceolate sepals and petals, and an elliptic apiculate lip, which is yellow at the base, the front half white covered with round purple dots.—*Mexico*.

FIG.—*Orchid Album*, v. t. 210.



GOVENIA DELICIOSA.

G. SULPHUREA, *Rehb. f.*—A pretty terrestrial Orchid, with onion-shaped bulbs, and lanceolate acuminate leaves about 2 inches in breadth, with a dark wine-coloured median rib; the flowers are large, and grow in many-flowered racemes, the sepals being light sulphur-coloured, the petals white on the disk, and sulphur on the margin, with numerous transverse broken purple lines, and the cordate-oblong lip white with the base bi-plicate, and having some dark brown spots at the apex.—*Paraguay*.

GRAMMANGIS.—See GRAMMATOPHYLLUM.

GRAMMATOPHYLLUM, *Blume*.

(Tribe Vandeeae, subtribe Cymbidieae.)

A small genus of somewhat large-growing plants, well worth a place in collections where there is accommodation for them. *G. speciosum* makes a magnificent specimen, having a noble appearance, but it requires considerable space to grow it to perfection. They are all stout-

growing epiphytes with elongate or pseudobulbous stems, distichous venose leaves, and long simple scapes from the base of the stems, bearing loose racemes of many showy flowers. Bentham adopts Reichenbach's view in separating *G. Ellisii* under the name of *Grammangis*, distinguished among other points by its petals and lip being much smaller than the sepals, and by its two-winged column. There are some half-dozen species found in Malacca and the Malay Archipelago and in Madagascar.

Culture.—The plants must be well grown, and after they have made a few strong growths, should have a decided season of rest. They require to be grown in peat, in a pot of ample size, and with good drainage; a liberal supply of water at the roots must also be given to them during the growing season. The East Indian house is the proper place in which to keep them throughout the year. They are propagated by parting the bulbs.

G. ELLISII, *Lindl.*—A charming and most attractive deciduous species, introduced by the late Rev. W. Ellis, of Hoddesdon, in compliment to whom it



GRAMMATOPHYLLUM ELLISII.

s named. It is a plant of smaller growth than *G. speciosum*, and more free-flowering, producing its flower scapes from the base of the pseudobulbs along with the young growths; these pseudobulbs are clavato-fusiform, quadr-

angular, a foot or more in length, and bear several distichous broadly lorate arching leaves, $1\frac{1}{2}$ to 2 feet long; the flowers form a recurved raceme, and are tawny yellow, closely marked by transverse lines of reddish-brown on the lower part, and having a blotch of the same colour near the acuminate inflexed tip, which is dull yellow, the dorsal sepal fornicate, and the two lateral ones saccato-gibbose at the base; the petals and lip are smaller, the latter white streaked with reddish-purple; the flowers, which are large and numerous (thirty to forty), have a peculiar varnished appearance. It blooms in July and August, and remains some time in beauty. This plant may be made to succeed in a basket or on a block suspended from the roof, provided it has a plentiful supply of water.—*Madagascar*.

FIG.—*Bot. Mag.*, t. 5179; *Batem. Second Cent. Orch. Pl.*, t. 176; *Flore des Serres*, tt. 1488—89; *Orchid Album*, iv. t. 147; *L'Orchidophile*, 1886, p. 352; *Lindenia*, viii. t. 338; *Veitch's Man. Orch. Pl.*, ix. p. 29.

SYN.—*Grammangis Ellisii*.

G. FENZLIANUM, *Rehb. f.*—An old species with short clavate pseudobulbs, and dark green leathery leaves; flowers about $2\frac{1}{2}$ inches in diameter, dull yellow-green, spotted and blotched heavily with dark brown.—*Amboyna*.

G. FENZLIANUM MEASURESIANUM.—See **G. MEASURESIANUM**.

G. MEASURESIANUM, *Sander*.—A beautiful new species, considered by some to be only a variety of the old *G. Fenzlianum*. Pseudobulbs short and stout; scape several feet in length, many-flowered; flowers 3 inches across; sepals and petals spreading, oblong, acute, petals slightly narrower than the sepals, bright green, profusely marked with irregular-shaped spots, and blotches of chocolate or purple, and tipped with the same colour; lip three-lobed, front lobe small, side lobes larger, erect, with purple lines, the disk bearing a crest of downy white hairs. Named in honour of R. H. Measures, Esq., of the Woodlands, Streatham, a most enthusiastic lover of Orchids.—*Philippine Islands*.

FIG.—*Journ. of Hort.*, 1891, xxiii. p. 342, f. 69; *Veitch's Man. Orch. Pl.*, ix. p. 31.

SYN.—*G. Fenzlianum Measuresianum*; *G. Seegerianum*.

G. MULTIFLORUM, *Lindl.*—The present plant is remarkable for its dwarf habit, and upon this account we are surprised it has not been more frequently found in collections. Pseudobulbs stem-like, some 2 feet high, stout, and bearing near the summit a few strap-shaped leaves, which are leathery in texture, and deep green; scape radical from 2 to 3 feet long, bearing a raceme of from sixty to seventy flowers, which are from $1\frac{1}{2}$ to 2 inches across; sepals and petals oblong, obtuse, the petals narrowest, yellowish-brown, striped with green; lip three-lobed, side lobes erect, somewhat falcate, anterior lobe oblong downy, bearing three ridges in front, yellow, with reddish-brown stripes. Flowers during the summer months.—*Luzon*.

G. MULTIFLORUM TIGRINUM, *Lindl.*—This variety has yellow flowers, spotted with purple, stained and striped with deep red. Blooms in the summer months.—*Luzon*.

G. PALUDOSUM.—See **DIPODIUM PALUDOSUM**.

G. SEEGERIANUM.—See *G. MEASURESIANUM*.

G. SPECIOSUM, *Blume*.—A magnificent Orchid with the habit of a *Cyrtopodium*, and of which it has been remarked, that it richly merits the title of the Queen of the Orchidaceous Plants. It has erect clustered terete compressed stems, 5 to 10 feet high, having a few large appressed scales below, and clothed in the upper part with distichous sheathing lorate leaves, $1\frac{1}{2}$ to 2 feet long, and dilated at the base; the scape issues from the base of the stem, is as thick as one's finger, and grows 5 to 6 feet high; the flowers measure nearly 6 inches across, and are of a deep yellow thickly spotted with reddish-brown, the sepal and petals being broadly oblong and blunt-ended, the small three-lobed lip yellow streaked with brownish-red, the disk sulcate with three raised plates, and the red lines of the front lobe bristling with short hair. It blooms at different times of the year, and will last a long time in perfection if the flowers are kept dry.—*Java; Lampong; Malacca; Singapore; Cochin China.*

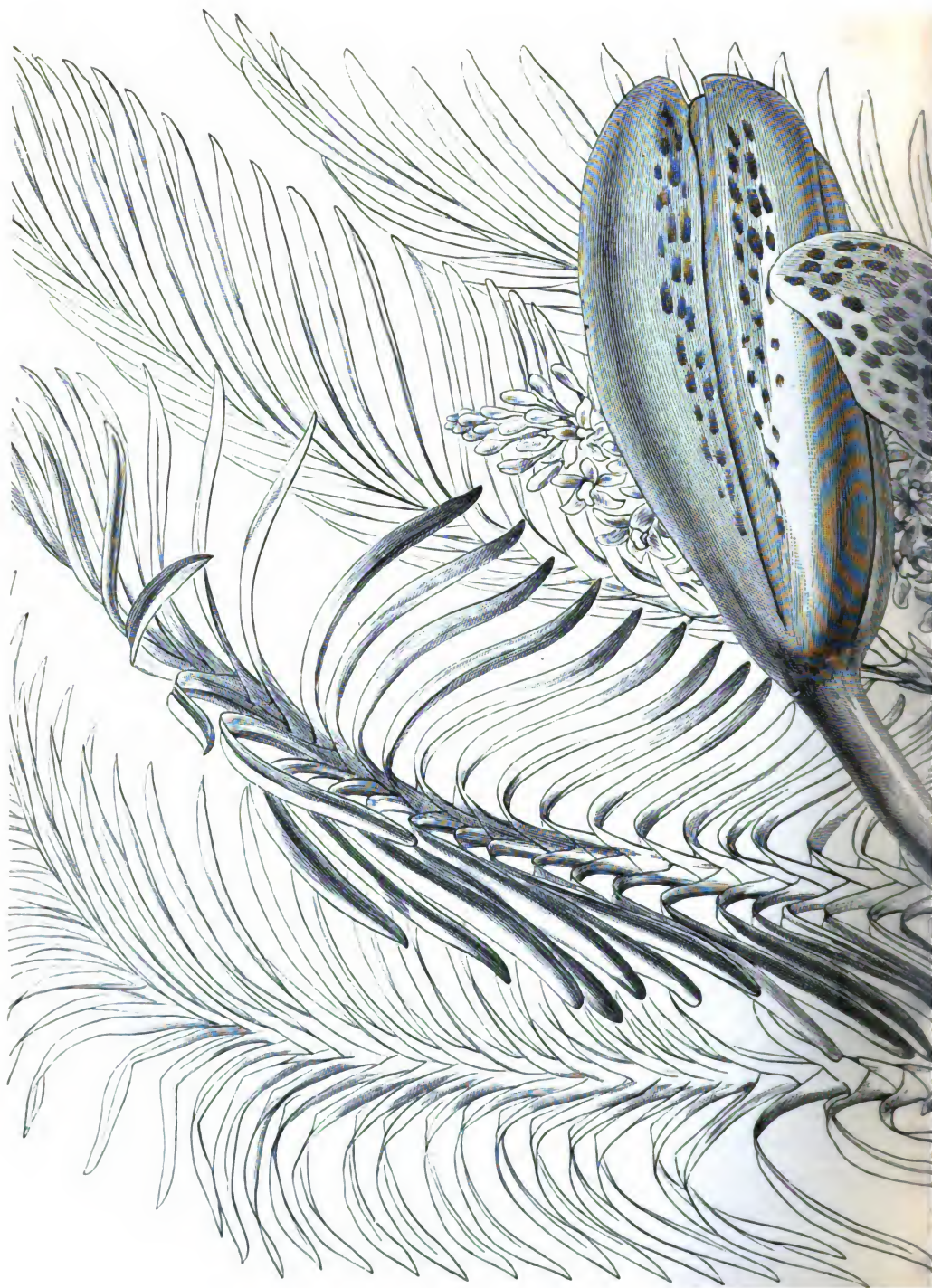
FIG.—*Bot. Mag.*, t. 5157; *Flora des Serres*, t. 1386; *Batem. Second Cent. Orch. Pl.*, t. 181; *Paxton Fl. Gard.*, ii. t. 69; *Lem. Jard. Fl.*, t. 235; *Blume, Bijdr.*, p. 377, tabell. 20; *Id.*, *Rumph.*, iv. t. 191; *Gard. Chron.*, N.S., x. p. 181, f. 36; *Id.*, 3rd ser., 1890, vii. p. 296, f. 46.

HABENARIA, *Willd.*

(Tribe *Orphrydeae*, subtribe *Gymnadenieac.*)

A genus containing several remarkably handsome species of tuberous-rooted, terrestrial Orchids. The numerous kinds are widely distributed, but the greater number occur in the East Indies, Africa, and various parts of Europe, some few being recorded as natives of Britain, where they are known by the name of the "Butterfly Orchis." The various species resemble one another very much in habit of growth, but they differ in colour and in the length of the spur, some of them being very fragrant. White is the prevailing colour, many of them are green, and there are a goodly number some shades of yellow, whilst others are rose-coloured, and some brilliant scarlet.

Culture.—These plants, from whatever country they come, are all tuberous-rooted, and their stems die down annually. When this occurs, they must be rested quietly and thoroughly. This is best done by lowering the temperature and withholding the water almost entirely, but never allow them to become dust dry, for this practice has done more to destroy the roots of these terrestrial kinds than any one thing. Take as an example our own native species; they are resting through the winter months, and it is quite understood that these plants never become dry through the whole winter, therefore keep the exotic kinds just moist and in a low temperature.





GRAMMATOPHYLLUM SPECIOSUM.
(From the *Gardeners' Chronicle*.)

The kinds found in our own country are more to be valued for their perfume than the beauty of their flowers. They are: *H. albida*, very sweet scented; *H. bifolia*, the Butterfly, very fragrant; *H. chlorantha*; and *H. viridis*, the Frog Orchis. These plants will thrive in the open air, and they enjoy a damp situation.

H. BLEPHARIGLOTTIS, *Hook.*—This plant was often imported with *H. ciliaris*. It is very similar in its growth, but stronger; the stem is crowned with a dense raceme of white flowers, which have a lanceolate lip, beautifully fringed at the edge, and a long slender spur. Flowers during the summer months.—*Canada*.

FIG.—*Hook. Ex. Fl.*, t. 87; *Lodd. Bot. Cut.*, t. 925.

H. CARNEA, *N. E. Brown.*—An exceedingly handsome and showy plant, with small dark green leaves, thickly spotted with white. The flowers are larger than those of *H. militaris*. The helmet-shaped portion is of a lovely rose colour, the remainder of the flower being white. They are furnished with spurs about $1\frac{1}{2}$ inch long.—*Singapore*.

FIG.—*Gard. Chron.*, 3rd ser., 1891, x. p. 729, f. 105; *Journ. of Hort.*, 1893, xxvii. p. 233, f. 40.

H. CILIARIS, *R. Br.*—A very pretty and rare species, which has been for a long time an inhabitant of our gardens. It grows a foot or more in height, has light green ovate lanceolate leaves, and terminates in a dense oblong spike of orange-yellow flowers, the lip of which is beautifully fringed. It requires the same treatment as the hardy *Cypripediums*.—*North America*.

FIG.—*Bot. Mag.*, t. 1668; *Andr. Bot. Rep.*, i. t. 42.

H. CILIARIS ALBIFLORA, *Gower.*—In this variety the flowers are entirely creamy-white, without any other variation from the type. About a dozen of this form were introduced with roots of the typical plant. Blooms during the summer months.—*Canada*.

H. MARGARITACEA, *Hort.*—In this plant the flowers are not large, but it really has very pretty variegated leaves. The plant grows about a foot high, bearing oblong-acuminate leaves, which are blotched and spotted with pure white, on a dark green ground; raceme terminal, somewhat dense; flowers white. Blooms in the summer months.—*South America*.

H. MILITARIS, *Rchb. f.*—A lovely plant, which was first discovered by M. Godefroy-Lebeuf in the mountains of Phu Quoch, and later by M. Regnier, of Fontenay-sous-Bois. It attains a height of from 1 to 2 feet, and is erect in growth, bearing about six light-green or bluish-green lanceolate leaves. The spike is terminated by a dense raceme of many long-spurred flowers, which are brilliant scarlet, with a faint tinge of rose on the upper side; underneath, the lip appears as if glazed with a white film, whilst the spur is green. A glance at our illustration will give a good idea of the shape of the flowers, which are produced in September and October. Sir Trevor Lawrence, Bart., whose gardener, Mr. White, grows this plant to perfection, exhibited a large basket full,

measuring 2 feet in diameter, on October 10th, 1893, before the Royal Horticultural Society when a silver flora medal was deservedly awarded to it.—*Cochin China*.



HABENARIA MILITARIS.
(From the *Journal of Horticulture*.)

FIG.—*L'Orchidophile*, 1887, p. 48 (plate); *Orchid Album*, vi. t. 281; *Journ. of Hort.*, 1888, xvi. p. 25, f. 3; *Revue Hort.*, 1888, p. 396 (plate); *Lindenia*, vii. t. 318; *The Garden*, 1893, xliii. p. 370, t. 908; *Gard. Mag.*, 1893, p. 436 (wood-cut).

H. SALACCENSIS,

Blume.—This species is truly more curious than beautiful. It is a plant which forms a stouter tuber than most of the known species, and has a stout stem, which grows to some 12 or 15 inches high, bearing leaves, broadly lanceolate, acuminate, with prominent nerves, deep green; raceme terminal, somewhat lax; sepals green, petals much narrower, almost thread-like, red; lip small, white, with a few red spots. Blooms in spring and early summer.—*Mount Salak, Java*.

FIG.—*Bot. Mag.*, t. 5196; *Blume Tabellen*, t. 13.

HAEMARIA, Lindley.

(Tribe Neottieae, subtribe Spirantheae.)

A neat and pretty dwarf-growing stove plant related to *Goodyera*, to which it was formerly referred. It differs, however, amongst other points, in having divergent instead of connivent lateral sepals, and a clawed instead of sessile lip, the limb of which is bi-lobed. It has the habit of the *Anoetochiloid* group,

and produces its erect spikes of white flowers very freely. There are some three or four species, which are natives of China, Cochin China, and the Malayan Archipelago.

Culture.—A useful stove plant when grown in five or six inch pots, several plants being put into a pot so as to make up a good specimen. We grow many of them in this way for blooming during the winter months, placing about six plants in a pot. They should be grown vigorously so as to ensure an abundance of bloom. In other respects the treatment noted for *Goodyera* will suit them. Even without any flowers, the plants themselves are by no means unattractive. See also under *Anoectochilus*.

H. DISCOLOR, *Lindl.*—A very handsome and free-blooming dwarf Orchid of the variegated foliage group. It grows about 10 inches high, and has deep purple fleshy stems, clothed with ovate leaves of a beautiful dark velvety-green, purplish-red beneath, and having a white bar in the centre through their entire length; the flowers are white, with a little yellow in the centre, and are produced in winter, lasting a long time in perfection.—*Hong-Kong*.

FIG.—*Lodd. Bot. Cab.*, t. 143; *Bot. Reg.*, t. 271; *Bot. Mag.*, t. 2055.

SYN.—*Goodyera discolor*.

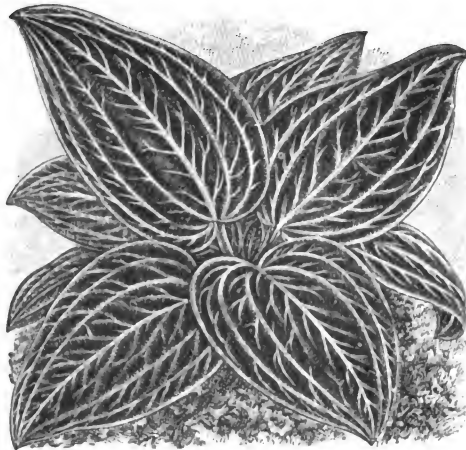
H. DISCOLOR DAWSONIANA, *Rchb. f.*—A very ornamental-leaved variety, which was at first distributed as an *Anoectochilus*. The leaves are large, ovate, stalked, blackish-bronzy green on the upper side, and very glossy, with about seven bold lines of a beautiful golden-coppery hue traversing them from base to apex, and connected by smaller reticulations of the same colour; the under side is of a uniform dull purple. The flowers, which are white, are freely produced, and become useful for bouquet making.—*Malay Islands*.

FIG.—*Flore des Serres*, t. 1083.

SYN.—*Anoectochilus Dawsonianum*; *Anoectochilus Dawsonianum*; *Goodyera Dawsoniana*.

H. DISCOLOR ORDIANA, *Williams*.—A very desirable plant, which in habit, and in the shape of the leaf, closely resembles *H. discolor Dawsoniana*, but the colour is a vivid green, instead of a deep brown, the leaves being lined out with golden veins.—*Malay Islands*.

SYN.—*Goodyera Ordiana*.



HAEMARIA DISCOLOR DAWSONIANA.

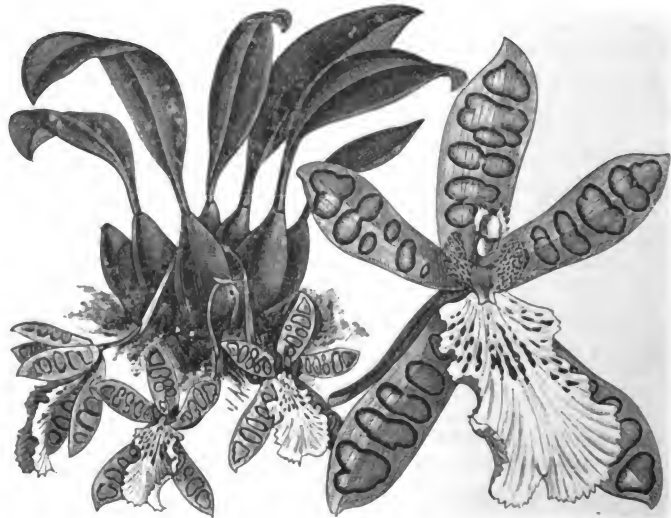
HELCIA, Lindley.

(Tribe Vandaceae, subtribe Oncidiaceae.)

A pretty dwarf-growing Orchid, the sole representative of a genus, which some of our great authorities merge in *Trichopilia*. It is a pseudobulbous epiphyte, with solitary coriaceous leaves, and peduncles springing from the base of the bulbs. It differs from *Trichopilia* amongst other things in its column standing erect and clear of the lip, instead of being rolled up in the latter; it has, moreover, a deep fringed border to the anther bed, and the lip is contracted near the middle, and below that furnished with a pair of thick fleshy erect lobes, hollowed out in the middle, standing up on each side of the column without touching it. It is from Tropical America.

Culture.—This is a small compact-growing evergreen plant, and succeeds well in the cool house. It is best grown in a pot with peat, moss, and good drainage, keeping it moist in the growing season.

H. SANGUINOLENTA, Lindl.—A very pretty dwarf tufted plant, with somewhat the habit of a *Trichopilia*. It has ovate elongate pseudobulbs, undulated

**HELCIA SANGUINOLENTA.**

leathery petiolate leaves 4 to 6 inches long, and numerous radical decurved scapes, each bearing a rather showy flower $2\frac{1}{2}$ inches across; the sepals and petals are narrow oblong, yellowish olive-colour marked with transverse bands of brownish-crimson, or, according to the figure in *L'illustration Horticole*, with

beautiful ocellate markings of the same colour; the lip is broadly obovate emarginate, recurved, white flabellately veined, the veins in the basal half marked out by broken lines of crimson.—*Andes of Guayaquil; Ecuador.*

FIG.—*L'Illust. Hort.*, 3rd ser., t. 31; *Paxton, Fl. Gard.*, ii. p. 97, f. 182; *Bot. Mag.*, t. 7281.

SYN.—*Trichopilia sanguinolenta* (*Xenia Orch.*, ii. t. 131).

HOULLETIA, Brongniart.

(Tribe Vandeeae, subtribe Stanhopieae.)

A small group of epiphytes, with large loosely racemose flowers, well worth cultivating on account of their distinctness, though they have been somewhat neglected by orchidologists. They have free spreading sub-equal sepals, and a narrow fleshy lip continuous with the column, the base hollowed or two-lipped, and the lateral lobes produced behind into retrorse curved horn-like processes, the broadish middle lobe articulated and undivided, often truncate or bi-auriculate at the base. They have one-leaved pseudobulbs, broad long-stalked plicately-venose leaves, and erect scapes rising from the base of the pseudobulbs. There are five species known, natives of Brazil and Colombia.

Culture.—The *Houlletias* grow best in pots, in peat with good drainage, and like a liberal supply of water during the growing season; they do well in the cool *Odontoglossum* house. Propagation is effected by separating the pseudobulbs just before they begin to grow.

H. BROCKLEHURSTIANA, *Lindl.*—A handsome, showy, and distinct species, which grows 2 feet or more high, and has conical furrowed pseudobulbs, and broadly lanceolate pale green leaves on long petioles; the flower scapes are stout, produced from the base of the bulbs, and are erect, ten- to twelve-flowered, the individual flowers very fragrant, half-nodding, and measuring $3\frac{1}{2}$ inches or more in diameter; the sepals are oblong, concave, and together with the spatulate petals are of a rich sienna-brown, spotted thickly with dark purple-brown, and the lip is yellow, more finely and thickly spotted with dark purple-brown, its side lobes linear-lanceolate reflexed, and the middle lobe (epichil) ovately triangular, somewhat hastate, the lateral lobes being acuminate. The flowers as figured in *Paxton's Magazine* are of a much darker brown, and the lip whitish striped and spotted with purple.—*Brazil.*

FIG.—*Lindl. Sert. Orch.*, t. 43; *Bot. Mag.*, t. 4072; *Hook. First Cent. Orch. Pl.*, t. 46; *Pescatorea*, t. 36; *Paxton, Mag. Bot.*, ix. p. 49, with tab.; *Gartenflora*, t. 229; *Orchid Album*, viii. t. 337; *Veitch's Man. Orch. Pl.*, ix. p. 122; *Lindenia*, v. t. 214.

SYN.—*Mazillaria Brocklehurstiana*.

H. CHRYSANTHA, *Linden et André.*—A very beautiful species, quite distinct from any other. The pseudobulbs are elongate ovate, furrowed, bearing

a tall ovate-lanceolate ribbed leaf on a longish petiole; the scape is erect, short, robust, of a deep red colour, bearing six or eight concave flowers, which are about 2 inches across, the sepals and petals similar, broadly obovate-obtuse cucullate, yellow and unspotted externally, golden yellow-inside, profusely blotched with chocolate-purple, the lip rich yellow, approaching to orange, freckled with crimson.—*New Grenada*.

FIG.—*L' Ill. Hort.*, 3rd ser., t. 71.

H. ODORATISSIMA, *Linden*.—A very handsome species of smaller stature than *H. Brocklehurstiana*. It has ovate ribbed pseudobulbs, from which spring the solitary long-petioled broadly lanceolate light green plaited leaves, the scape rising from the base of the bulbs to the height of about 1½ foot, and bearing nodding flowers 3 inches across, the sepals and petals oblong acute, pale dull purplish-red, closely and faintly marked by darker lines, and the lip white, with its blunt sub-sagittate epichil stained with yellow, the horns of the hypochil being of a dull red. The name is applied in allusion to the exquisite and powerful odour of violets given off by the flowers.—*U. S. of Colombia*.

FIG.—*Peacatorea*, t. 3; *Gard. Chron.*, N.S., 1885, xxiv. p. 777, f. 173; *L' Orchidophile*, 1887, p. 273; *Lindenia*, vii. t. 324; *Veitch's Man. Orch. Pl.*, ix. p. 124.

H. ODORATISSIMA ANTIOQUIENSIS, *Linden*.—A very fine variety of the preceding, with dark green pseudobulbs and leaves, and an erect scape bearing many flowers; the sepals are much broader than the petals, and like them deep chestnut-brown, while the curious lip, which is very long and somewhat sagittate, is white, faintly tinged with pale yellow. It succeeds in a moderately cool temperature.—*U. S. of Colombia*.

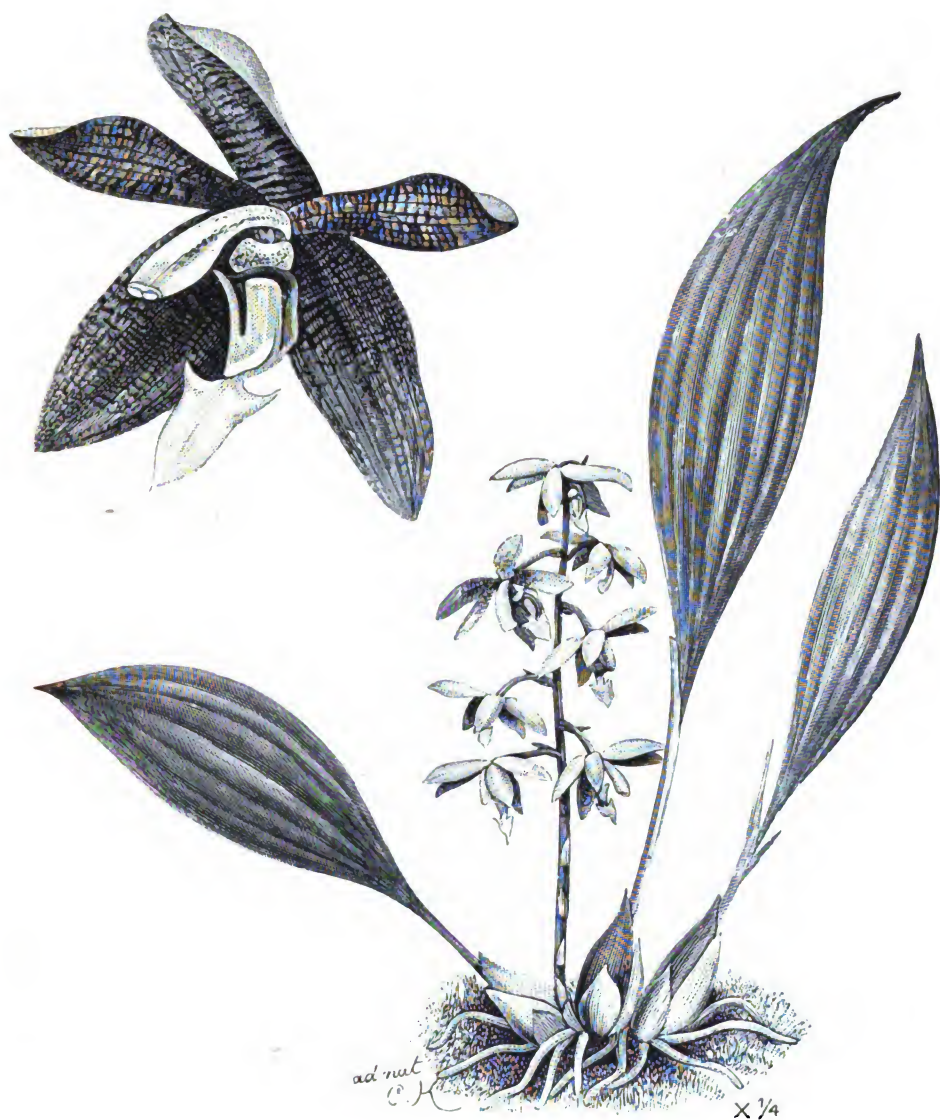
FIG.—*L' Ill. Hort.*, 1870, p. 59, t. 12; *Revue Hort. Belge*, 1890, p. 121, t. 11; *Orchid Album*, vii. t. 316.

H. ODORATISSIMA XANTHINA, *Rchb. f.*—A yellow form of the type, in which the sepals and petals are orange, and the lip sulphur and white, with falcate horns, and a stipitate clavate callus. It is very distinct.—*U. S. of Colombia*.

H. PICTA, *Linden et Rchb. f.*—A handsome and distinct plant, well worthy a place even in select collections. It has tufted narrow ovoid furrowed pseudobulbs, from each of which one elliptic-lanceolate plaited leaf with a long slender petiole grows up. The erect robust scape is radical, and including the raceme, from 18 to 20 inches high, six- to ten-flowered, each flower being 3½ inches across; the sepals oblong bluntish, deep cinnamon, unspotted in the upper half, and closely tessellated with yellow in the lower half; the petals are smaller and more narrowed towards the base, but of a similar colour; the lip has a sub-quadrated or sub-trapeziform hypochil with two long ascending spurs, yellow spotted with crimson-purple, the epichil broadly hastate, with two short recurved horns, and the deeply channelled apex recurved, pale yellow, marked closely with short transverse red-purple bars.—*New Grenada*, elevation 4,000 to 6,000 feet.

FIG.—*Bot. Mag.*, t. 6305.

H. TIGRINA, *Linden*.—A showy and exceedingly pretty species. The pseudobulbs are about 2 inches long, somewhat ovate, supporting long-stalked dark green erect plaited leaves, which are blunt at the end; the scape is about as



HOULETTIA ODORATISSIMA.
 (From the *Gardeners' Chronicle*.)

thick as a swan's quill, greenish-red, decurved, bearing handsome flowers, which are 4 inches in diameter, firm in texture, with oblong concave straw-coloured sepals richly mottled with deep rose, very acute three-lobed petals of a brilliant yellow barred with crimson, and a lip which is, yellowish at the point, otherwise white speckled over with crimson.—*New Grenada*.

SYN.—*Paphinia tigrina*.

FIG.—*L' Ill. Hort.*, t. 612.

HUNTLEYA.—See BATEMANIA AND WARSCEWICZELLA.

IONOPSIS, *Humboldt, Bonpland, and Kunth.*

(Tribe Vandeeae, subtribe Oncidieae.)

A genus of limited extent, of epiphytal habit, the short slender stems bearing thick narrow distichous sheathing leaves, and long slender rigid peduncles which proceed from the top or upper parts of the stem, and bear either simple racemes or panicles of flowers; these have a broad lip, which is prominent owing to the length of its claw. They are of Tropical American or West Indian origin. We specially recommend the species named below.

Culture.—These plants succeed best on a block with a little live sphagnum moss round the roots, which require to be kept moist nearly all the year round. We have found them do well in the coolest house, suspended near the glass, where they continue in bloom for several weeks at a time. They are difficult plants to grow, for we seldom see them continuing to do well—indeed we often find them flowering themselves to death.

I. PANICULATA, *Lindl.*—

A charming small free-flowering Orchid that ought to be in every collection. The leaves are 6 inches high, and proceed from very slender stems which scarcely form pseudobulbs; the flower scapes, which are 1½ foot high and branching, proceed from the axils of the leaves, the blossoms, produced twice a year, being of a pretty blush-white, the broad roundish bi-lobed



IONOPSIS PANICULATA.

lip having a lovely purple spot on its base; they vary, however, in colour, some being almost pure white, some pencilled with rose, and some white and yellow. According to Descourtilz, the scentless flowers remain fresh in their native forests from September or October till the following May. There is a variety *maxima* with much larger flowers.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5541; *Lindenia*, iii. t. 114 (var. *maxima*).

I. TENERA.—See I. UTRICULARIODES.

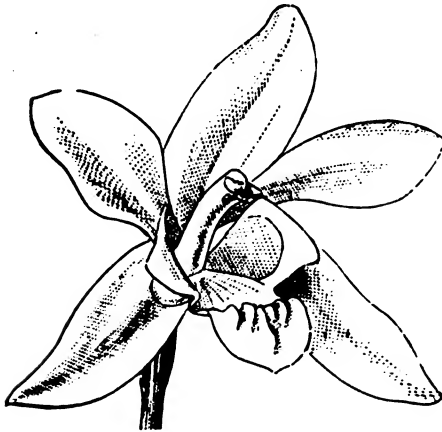
I. UTRICULARIODES, *Lindl.*—This species, though seldom seen in cultivation, is very pretty. "Flowers racemose white with a pink stain at the base of the lip; sepals and petals acute, sub-equal; lip pubescent; limb bi-lobed, much longer than the sepal."—*Tropical America*.

FIG.—*Bot. Mag.*, t. 1904.

IPSEA, *Lindley*.

(Tribe Epidendreae, subtribe Eriace.)

This small group of two species only is sometimes referred to *Pachystoma*. The *Ipseas* are terrestrial plants, with tuberous rhizomes, leafless scapes, and narrow lanceolate plaited leaves. The lateral sepals are oblique at the base, connate with the foot of the column, and saccate; the lip is three-lobed, the lateral lobes large erect, and the middle one oblong obtuse with the disk obtusely keeled. They come from Ceylon and India.



IPSEA SPECIOSA.

(From the *Gardeners' Chronicle*.)

Culture.—The same as that recommended for *Bletia*.

I. SPECIOSA, *Lindl.*—This is a beautiful terrestrial finely pubescent Orchid, with somewhat the habit of a *Bletia*. The rhizomes are tuberous, terrestrial, fleshy, as large as or larger than a nut, fascicled, sub-globose with conical tops, from whence grow the slender lanceolate ribbed leaves 6 or 8 inches long; from their base arise the leafless erect scapes, each furnished with several large flowers

of a uniform rich orange-yellow, marked by several parallel lines of reddish-orange on the disk, which lines indicate the position of several bluntly keeled crests which are there developed.—*Ceylon*.

KOELLENSTEINIA, Reichenbach fil.

(Tribe, Vandaceae, subtribe Cyrtopodieae.)

A small genus of Vandaceous Orchids belonging to the group *Cyrtopodieae*, included by Bentham in the genus *Aganisia*. They are small-flowered Tropical American plants, of little interest to growers of the choicer kinds of Orchids.

Culture.—The same as that recommended for *Aganisia*.

K. IONOPTERA, *Linden et Rehb. f.*—A rather nice plant, with leafy stems, cuneate-oblong leaves, and a basal peduncle more than a foot long, bearing at the top a raceme of flowers; these flowers, not very much larger than those of the Lily of the Valley, are white, with violet tips and streaks on the sepals, violet petals and numerous transverse violet-purple bars on the lip.—*Peru*.

LAELIA, Lindley.

(Tribe Epidendreae, subtribe Laelieae.)

This is a very lovely genus of epiphytal Orchids, most of the species being compact in their growth, with evergreen leathery or fleshy leaves, resembling in some respects those of the genus *Cattleya*, to which many of them are equal in the beauty of their flowers, which are large, distinct in colour, and very handsome, produced on spikes of varied length from the top of their one or two-leaved pseudobulbs. They are nearly allied to *Cattleya*, and, in fact, cross readily with the species of that genus. The genus is, however, retained by Bentham and Hooker, who distinguish it by the presence of eight pollinia in two series, the series being slightly unequal, while in *Cattleya* there are only four pollen masses forming a single series. Reichenbach includes the whole group in *Bletia* along with the *Cattleyas*. These plants merit a place in every collection, and will amply repay the cultivator for any care they may require; indeed, *Laelia* comprises species which are among our finest Orchids whether for winter or summer blooming.

Culture.—Some of the species are best grown on blocks of wood with moss; others thrive well in baskets and pots with peat and good drainage. The large-growing kinds are best grown in pots, and require the same treatment as *Cattleyas*. Those on blocks require more water, and are best grown in the *Cattleya* house, though some, such as *L. autumnalis*, *L. albida*, and *L. majalis*, do not require so much heat to grow them to perfection. They are propagated in the same way as *Cattleya*.

L. ACUMINATA, *Lindl.*—A pretty delicate-flowered, compact-growing species, with ovate compressed rugose pseudobulbs, solitary oblong emarginate leaves, and corymbs of about four graceful fragrant flowers, 2 inches across, on slender scapes about a foot high; the sepals and petals are white, the latter broader and wavy, and the lip oblong, with short rounded basal lobes, white, with a blotch of deep purple in the throat. It blooms in December and January, and lasts two or three weeks in beauty. Its native name is *Flor de Jesu*.—*Guatemala*.

FIG.—*Bot. Reg.*, 1841, t. 24; *Bot. Mag.*, t. 4905; *Flore des Serres*, t. 9; *Veitch's Man. Orch. Pl.*, ii. p. 81 (*L. rubescens*).

SYN.—*L. rubescens*.

L. ACUMINATA ROSEA, *Hort.*—A very pretty variety with pale rose-coloured flowers, which has been imported for *L. peduncularis*, but is quite distinct.—*Guatemala*.

FIG.—? *Paxton, Mag. Bot.*, x. 49, with tab.

L. ALBIDA, *Bateman.*—A lovely compact-growing species, with oval sulcate pseudobulbs, each bearing a pair of narrow lanceolate acute leaves, and a terminal erect, five- to eight-flowered raceme of blossoms, the odour resembling that of the leaves of the Chinese primrose. The flowers have the sepals and petals white, the lip pale pink or deep rose pink, with three yellow lamellae or crests down the centre. It blossoms in December and January, lasting a good time in beauty. There are several varieties of this plant. It is best grown on a block in the cool house.—*Mexico: Oaxaca*.

FIG.—*Bot. Reg.*, 1889, t. 54; *Bot. Mag.*, t. 3957; *Orchid Album*, iii. t. 138; *Floral Mag.*, t. 335 (*rosea*); *L'Orchidophile*, 1883, p. 337; *Veitch's Man. Orch. Pl.*, ii. p. 56; *The Garden*, 1889, xxxv. p. 314.

L. ALBIDA BELLA, *Hort.*—A very fine and striking variety, in which the flowers are much larger and the spikes stronger than those of the type. The sepals and petals are creamy white, tipped with rosy lilac, and the lip is yellow, with a broad band of magenta around the middle lobe, and an orange-yellow throat. It flowers in December and January.—*Mexico*.

FIG.—*Orchid Album*, v. t. 239.

L. ALBIDA MARIANAE, *Warner.*—A charmingly pretty variety of compact habit, with pale green foliage and flowers, in which the sepals and petals are flesh-colour, changing to salmon; the lip is mauve, with buff-coloured stripes. A desirable plant, blossoming during winter, and as it continues in bloom four or five weeks, it is a valuable addition to a collection when flowers are generally scarce.—*Mexico*.

L. ALBIDA STOBARTIANA, *Rchb. f.*—A beautiful variety, having the sepals and petals with large purple tips. It was named in honour of W. C. Stobart, Esq., of Etherley Lodge, Darlington.

FIG.—*Reichenbachia*, ii. t. 68 (*albida* only).

L. ALBIDA SULPHUREA, *Rchb. f.*—A very handsome and distinct variety, having large flowers; the sepals and petals are sulphur-coloured, and the lip mauve on each side of the anterior lobe, the crests orange. A fine example of

this variety was flowered in November, 1887, by Mr. Maulden, when gardener to S. T. Walley, Esq., Fallowfield, Manchester. It produced six spikes averaging six flowers on each.—*Mexico*.

FIG.—*Orchid Album*, vii. t. 320.

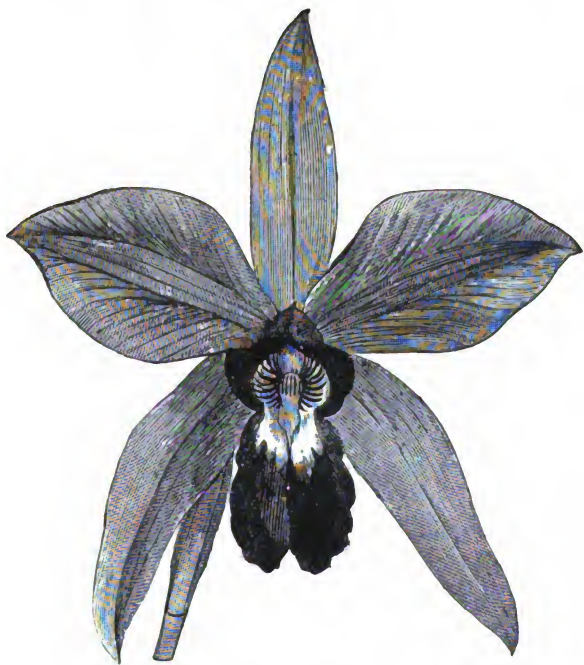
L. AMANDA, *Rchb. f.*—A very distinct and handsome plant, which, it has been suggested, may be a natural hybrid. It has thin fusiform stems, 6 to 8 inches in height, of a light green colour, and bearing two cuneate-ligulate, coriaceous leaves, 6 to 9 inches long, tinted with red underneath when young; the flowers are 5 to 6 inches across, and are produced on two-flowered peduncles; the sepals and petals light rose or flesh-colour, the lip deeper rose, having a rich purple venation; at first sight the flowers resemble those of *Cattleya maxima*, and we should think this plant may possibly have been one of its parents. It flowers in October, and lasts for six weeks in beauty.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 135.

SYN. — *Cattleya Rothschildiana*.

L. AMESIANA. — See LAELIO-CATTELEYA AMESIANA.

L. ANCEPS, *Lindl.*—A remarkably handsome species, and one of the most useful winter-flowering Orchids we have. It has oblong-compressed, somewhat quadrangular pseudobulbs 4 or 5 inches long, oblong-lanceolate leaves, generally in pairs but sometimes solitary, and long two-edged scapes from the apex of the pseudobulbs, bearing two to five large showy flowers 3 or 4 inches across, which will last for a month in perfection if kept in a cool dry house; the sepals and petals are rose-lilac, the lip a beautiful deep purple, with the broad side lobes yellow marked with deep red lines; the disk has a crest of three yellow ridges. It blooms in December and January, and should be grown in the Mexican house, as it delights in an abundance of light and air; a copious supply of water should be given to it in the growing season.—*Mexico*.



LAELIA ANCEPS.

FIG.—*Bot. Reg.*, t. 1751; *Bot. Mag.*, t. 3804; *Orchid Album*, ii. t. 75; *Paxton, Mag. Bot.*, iv. p. 73, with tab.; *Gartenflora*, t. 140 (*superba*); *Hook. First Cent. Orch. Pl.*, t. 24; *Veitch's Man. Orch. Pl.*, ii. p. 57; *Gardening World*, ix. p. 357.

L. ANCEPS ALBA, *Rchb. f.*—A remarkably chaste and beautiful variety, in which the sepals and petals are broad and pure white as in *L. anceps Dawsoni*; the lip is also pure white, with a pale yellow disk. It blossoms in December and January.—*Mexico*.

FIG.—*Gard. Chron.*, 3rd ser., 1887, i. p. 485, f. 92; *Gardening World*, ix. p. 357.
 SYN.—*L. anceps virginialis*.

L. ANCEPS AMESIANA, *O'Brien*.—"The outline of this superb flower is exactly that of *L. anceps Dawsoni*, and it has the same firm substance and wax-like appearance of the petals, which are $1\frac{1}{2}$ inch in width, the flower in its full expanse being 4 inches. The sepals and petals are pure white, with a delicate pearly blush on the outer halves; the sepals have at the apices an emerald green dot, and the petals a crimson feather at the tips, after the manner of *Cattleya Trianae Backhouseana*" (*J. O'Brien*, in *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 660).

FIG.—*Journ. of Hort.*, 1893, xxvii. p. 505, f. 73.

L. ANCEPS ASHWORTHIANA, *Hort. Sander*.—A lovely and chaste form which was exhibited by Messrs. Sander & Co. before the Royal Horticultural Society on January 16th, 1894. The sepals and petals are pure white, the latter being very broad and flat; the lip is white, veined in the throat with lilac, front lobe pencilled sparingly with the same colour.

FIG.—*Gard. Chron.*, 3rd ser., 1894, xv. p. 103, f. 10; *Journ. of Hort.*, 1894, xxviii. p. 125, f. 19.

L. ANCEPS BARKERIANA, *Lindl.*—This is one of the deepest-coloured varieties of *L. anceps*. The sepals and petals are a tint of deep purplish-rose colour, and the lip, which is shorter and narrower than in the type, is of an intense magenta-purple with a yellow disk. This variety has long been in cultivation, but is nevertheless rare.—*Mexico*.

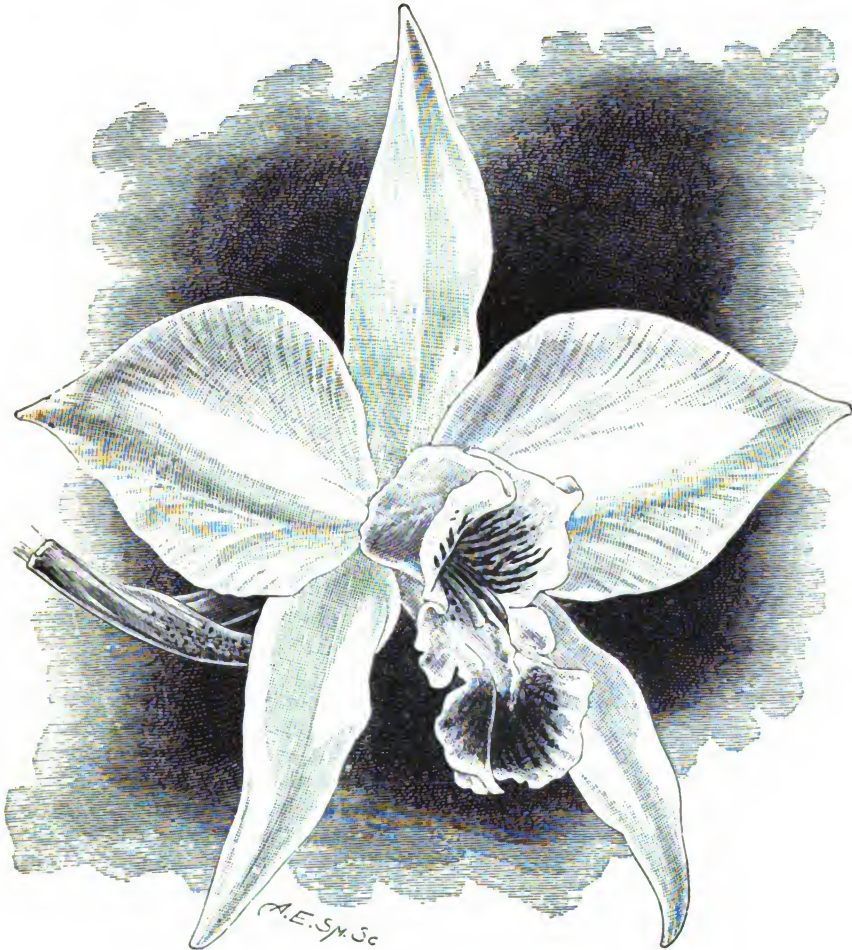
FIG.—*Bot. Reg.*, t. 1947; *Flore des Serres*, t. 1100; *Knowles and Westc. Floral Cub.*, t. 30; *Reichenbachia*, i. t. 48; *Gardening World*, ix. p. 357.

L. ANCEPS BLANDA, *Rchb. f.*—In this variety the sepals and petals are white tinged with rose; the median nerves of the sepals light green; the anterior lobe of the lip is emarginate, blunt, of a warm purple colour.

L. ANCEPS DAWSONI, *Anderson*.—This beautiful variety is a great acquisition amongst our winter-flowering Orchids. It flowered for the first time in this country in the autumn of 1867 with the late T. Dawson, Esq., at Meadow Bank, Uddingston, N.B., then the great emporium for Orchid gems and novelties, and again in January, 1868, in the collection of E. Wright, Esq., Gravelly Hill, Birmingham, by whose gardener, Mr. Hodges, it was exhibited at South Kensington. The special distinguishing character of the plant resides in the colour of its flowers, which are produced two or three together on stems 2 feet long or more, and in the breadth of its petals. The sepals and petals are pure white, and the exterior of the lateral lobes of the lip is white, while the interior is clothed with purple lines radiating from the base, the yellow crest under the column, common to the species, being prominent; the front or expanded portion of the lip is undulating and recurved, white towards the lateral lobes, and deep rosy-

purple near the extremity, the whole being broadly margined with white.—*Mexico: Juquila.*

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 34; *Orchid Album*, i. t. 44; *Floral Mag.*, t. 530; *Jennings, Orch.*, t. 6; *Gard. Chron.*, 3rd ser., 1887, i. p. 424, f. 82; *Veitch's Man. Orch. Pl.*, ii. p. 58; *Gardening World*, ix. p. 295.



LAELIA ANCEPS DAWSONI.
(From the *Gardeners' Chronicle*.)

L. ANCEPS DELICATA, Hort.—A distinct and handsome form, with scapes bearing from four to six flowers each. The sepals and petals are white, stained with rosy-purple; the lip white, suffused with reddish-purple and shaded with violet, the throat being orange-yellow. This variety is deserving the attention of all cultivators of these plants, on account of the numerous flowers borne on each raceme.—*Mexico.*

L. ANCEPS GRANDIFLORA, *Williams*.—This variety has very large highly-coloured flowers of fine form and substance. The growth of the plant is altogether stronger than in the ordinary *L. anceps*, and the flowers are about half as large again, and better coloured.—*Mexico*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iii. p. 105, f. 17.

L. ANCEPS HILLIANA, *Rchb. f.*—A very delicate and beautiful form, having white sepals and petals, a yellowish lip, the front parts of the three lobes being of a soft blush pink; the disk deep orange, sometimes having dark purple-crimson markings in the throat; the lip instead of being acute is bi-lobed or emarginate. This is named in honour of C. J. Hill, Esq., of Nottingham, an enthusiastic collector of this class of plants.—*Mexico*.

FIG.—*Orchid Album*, iv. t. 146; *L'III. Hort.*, xxxiii. t. 584; *Gard. Chron.*, 3rd ser., 1887, i. p. 425, f. 83.

L. ANCEPS KIENASTIANA, *Rchb. f.*—"This would be *L. anceps Dawsoni* itself were it not for the rosy hue of the fine broad petals, the edges of the side laciniae too are of a fine rosy colour. It is named after Herr Consul Kienast Zolly, of Zurich" (*Gardeners' Chronicle*, n.s., 1886, xxv. p. 298).

L. ANCEPS LEUCOSTICTA, *Rchb. f.*—"This has long white or whitish-rosy markings on the darker rosy sepals and petals; they are usually either broad linear, triangular, or short elliptical. It was flowered by Mr. Greenfield, Beechwood Park, Dunstable" (Reichenbach in *Gardeners' Chronicle*, n.s., 1885, xxiii. p. 206).

L. ANCEPS OBSCURA, *Rchb. f.*—This distinct variety has long dark-coloured sepals and petals, the former being white at the base. The disk of the lip is dark orange, and the anterior lobe deep purple.

L. ANCEPS PERCIVALIANA, *Rchb. f.*—A very distinct and pretty variety named in honour of the late R. P. Percival, Esq., Southport. Its leaves are somewhat narrower than in the type, and very pointed, and the flowers are freely produced; the sepals and petals are blush-pink as in the ordinary forms, but the lip, which is truncate, not acute, has the lateral angles of the warmest mauve-purple, while the anterior portion is of a bright purple-magenta only at the extreme anterior third, the posterior two-thirds being white; the disk is light orange, with the tips of the three crests sulphur-yellow, and there are some strong dark purple lines over the nerves of the disk.—*Mexico*.

FIG.—*Orchid Album*, vi. t. 256; *Reichenbachia*, i. t. 36.

L. ANCEPS ROSEA, *Rchb. f.*—A very pleasing and distinct variety, in which the flowers have pale rose-coloured sepals and petals, and the lip is large, and of a bright rosy-magenta colour; the throat is pale yellow, and the dark line usually seen in the species is entirely wanting.—*Mexico*.

L. ANCEPS SANDERIANA, *Rchb. f.*—A beautiful and distinct variety, nearest to *L. anceps Dawsoni*, but the petals are not so broad, and the lip is not



LAELIA ANCEPS STELLA.
(From the *Gardeners' Chronicle*.)

so deeply coloured with rosy-purple as in that variety, neither is it so free a bloomer. Flowers in winter.

FIG.—*Reichenbachia*, ii. t. 56; *The Garden*, 1893, xlv. p. 284, t. 928, f. 2; *Gard. Chron.*, 3rd ser., 1887, i. p. 281, f. 59; *Gard. Mag.*, 1894, Feb. 17th (suppl.)

L. ANCEPS SCHRÖDERIANA, *Rchb. f.*—A very large and handsome variety. Pseudobulbs larger than those of any other white form; the sepals and petals are of fine form and substance, pure white, lip broad, with rectangular obtuse side lobes, which are streaked on the inside with forked lines of purplish-crimson; the middle lobe having a raised orange-coloured disk, the remaining portion pure white. Dedicated to Baron Sir J. H. W. Schröder, The Dell, Staines.

FIG.—*Reichenbachia*, 2nd ser., i. t. 13; *The Garden*, 1893, xlv. p. 284, t. 928, f. 1; *Orchid Album*, x. t. 473.

L. ANCEPS SCOTTIANA, *Williams*.—The darkest coloured variety of *L. anceps* we have seen. It resembles the type in its habit of growth. The individual flowers are 5 inches across, of good form and substance; the sepals and petals deep violet-purple; sepals paler towards the base; lip deep purple, throat orange. Flowered by W. A. Scott, Esq., Nunfield, Dumfries, to whom it is dedicated.

FIG.—*Orchid Album*, vii. t. 325.

L. ANCEPS STELLA, *Rchb. f.*—A beautiful and distinct variety, which resembles the type in growth, but the pseudobulbs are longer; the sepals and petals are white, lip also white, the outside of the side lobes pale sulphur-yellow, diagonally veined with dull pale purple; the middle lobe covered about the centre with short radiating faint purplish lines; throat yellow, streaked with purple. This variety first flowered in the collection of H. Gaskell, Esq., Woolton Wood, Liverpool. Blooms in December and January.

FIG.—*Orchid Album*, vii. t. 329; *Reichenbachia*, i. t. 48; *Gard. Chron.*, 3rd ser., 1887, i. p. 280, f. 58; *Id.*, 1890, viii. Nov. 1st (supplement).

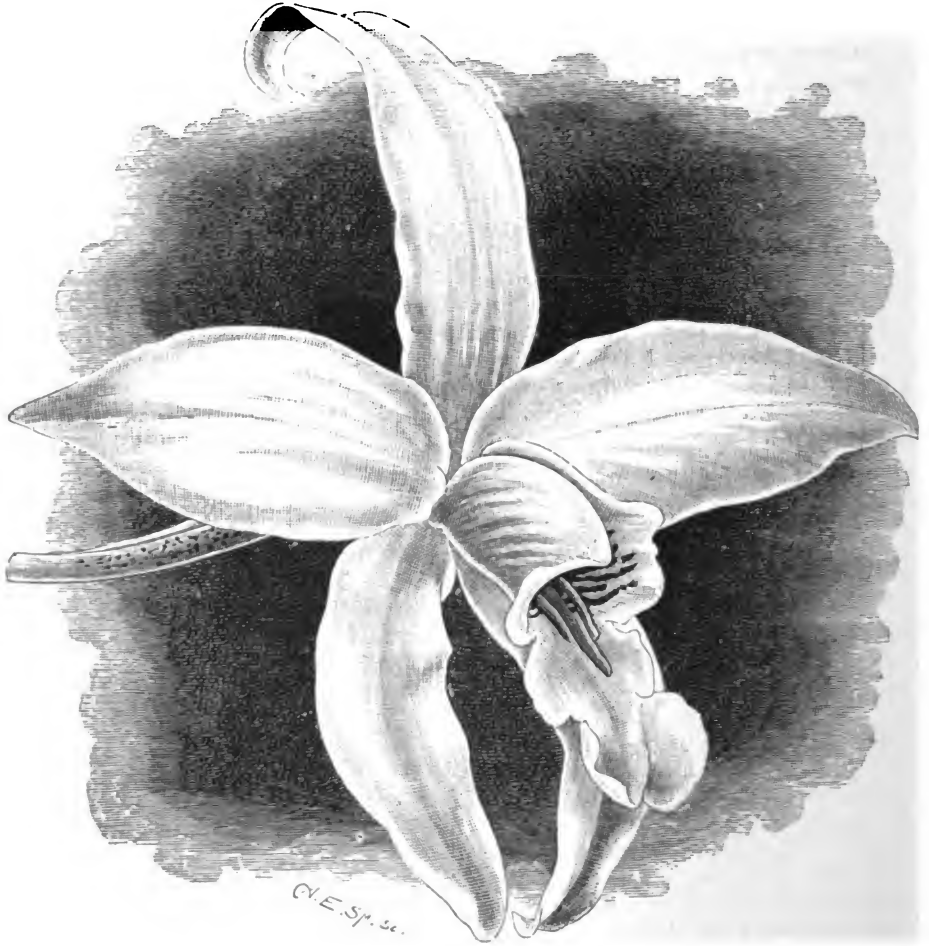
L. ANCEPS VEITCHIANA, *Rchb. f.*—We saw this distinct plant well flowered in the collection of Baron Sir J. H. W. Schröder, The Dell, Staines, in January, 1884. The sepals and petals are white, suffused with lilac, the petals being about 1 inch across in the centre; the lip is white, its front part and the angles of the side lobes violet-purple, after the style of *L. anceps Percivaliana*; the crests of the disk are yellow, and the throat striped with brownish-purple. It blooms in January and February.—*Mexico*.

FIG.—*Gardening World*, vi. p. 284; *Id.*, ix. p. 357.

L. ANCEPS VESTALIS, *Rchb. f.*—A very lovely distinct white-flowered variety. The flowers are large; the sepals, broad petals, and lip pure white, with a pale yellow disk, and a few purple lines in the throat. This variety was first flowered by Sir Trevor Lawrence, Bart., in January, 1880, and is one of those which have the middle lobe of the lip emarginate.—*Mexico*.

L. ANCEPS VIRGINALIS.—See *L. ANCEPS ALBA*.

L. ANCEPS WILLIAMSIANA, *Sander*.—A chaste variety of this favourite winter-flowering Orchid, in which the pseudobulbs are much shorter and rounder than in the other white forms; the sepals and petals are pure white, of



LAELIA ANCEPS WILLIAMSIANA.
(From the *Gardeners' Chronicle*.)

good form and substance, and the lip white, having a yellow disk and a yellow throat distinctly striped with deep crimson-purple. It blossoms during the winter months. A plant of this variety realised some few years ago 90 guineas at an auction sale.—*Mexico*.

FIG.—*Orchid Album*, iv. t. 190; *Gard. Chron.*, 3rd ser., 1887, i. p. 349; *Gardening World*, ix. p. 357, f. 72.

L. ARNOLDIANA.—See **LAELIO-CATTLEYA ARNOLDIANA**.



LAELIA AUTUMNALIS.

L. AUTUMNALIS, *Lindl.*—One of the most useful autumn-flowering Orchids and one that should be in every collection. It is very showy, and has ovate terete ribbed pseudobulbs, bearing two or three oblong-linear spreading leaves, and from the apex flower-scapes 12 inches high or more, often bearing as many as nine flowers on a single spike; the flowers are 4 inches across and fragrant, the perfume being powerful; the lanceolate sepals and the oblong-lanceolate undulated petals of a beautiful rosy-purple colour, the lip with large roundish erect white side lobes, and an oblong lanceolate rose-coloured front lobe reflexed at the tip, the disk spotted and streaked with purple, and bearing two yellow lamellae or crests. It blooms during the autumn and early winter, lasting about a fortnight in good condition. There are several varieties of this plant, some of them much richer in colour than others. This should be grown in the Mexican house either in a pot or on a block.—*Mexico*.

FIG.—*Bot. Reg.*, 1839, t. 27; *Bot. Mag.*, t. 3817; *Purton, Mag. Bot.*, vi. p. 121, with tab.; *Buteman, Orch. Mex. et Guat.*, t. 9; *L'Illustr. Hort.*, t. 17; *Hook. First Cent. Orch. Pl.*, t. 26; *Veitch's Man. Orch. Pl.*, ii. p. 61.

L. AUTUMNALIS ALBA, *Williams*.—This is a beautiful pure white form, having only a faint tinge of yellow on the disk of the lip. It has flowered with G. C. Raphael, Esq., of Englefield Green, and in the Victoria and Paradise Nurseries.—*Mexico*.

FIG.—*Orchid Album*, x. t. 451.

L. AUTUMNALIS ATRO-RUBENS, *Backhouse*.—A most magnificent form of *L. autumnalis*, in which the bulbs are much larger, and the flower spikes much stronger than those of the type, besides which its blossoms are far deeper and richer in colour; the flowers are upwards of 4 inches across, and from six to nine are borne on one scape; the sepals and petals of a brilliant purplish-crimson colour; the middle or front lobe of the lip dark purple-crimson, while the lateral lobes which enclose the deep crimson column are pure white. This striking contrast of white against purple gives to the flower an altogether unique and charming appearance. It flowers in November and December, and lasts about three weeks in perfection.—*Mexico*.

FIG.—*Orchid Album*, ii. t. 49.

L. AUTUMNALIS VENUSTA, *Hort*.—A very fine form, with broad sepals, petals, and lip; tips of sepals and petals flushed with deep rosy-purple, throat pure white. It flowered in the collection of the late A. Wilson, Esq., of Westbrook, Sheffield.

L. AUTUMNALIS XANTHOTROPIS, *Rehb. f.*—In growth this plant is somewhat distinct, the leaves being much smaller than the typical plant. Sepals and petals soft rose, the petals much broader than the sepals, all tipped with rosy-purple; lip large, the front lobe transversely-oblong, rosy-purple, with a yellow base. Flowers in the summer months.—*Mexico*.

FIG.—*Reichenbachia*, i. t. 10.

L. BELLA.—See *LAELIO-CATTLEYA BELLA*.

L. BOOTHIANA.—See *CATTLEYA LOBATA*.

L. BRYSIANA.—See *LAELIA PURPURATA BRYSIANA*.

L. CALLISTOGLOSSA.—See *LAELIO-CATTLEYA CALLISTOGLOSSA*.

L. CANHAMIANA.—See *LAELIO-CATTLEYA CANHAMIANA*.

L. CAULESCENS.—See *LAELIA FLAVA*.

L. CINNABARINA, *Bateman*.—A charming and distinct species, very compact in growth. The pseudobulbs are stem-like elongated sub-cylindrical, but broadest at the base, clothed with sheathing scales, and bearing one or two linear-oblong acute leathery leaves; the scape is terminal, erect, bearing a raceme of five or six flowers, which are of a uniform reddish-orange colour, the sepals and petals narrow lanceolate, the former about $1\frac{1}{2}$ inch long, longer than the convolute crisped lip. It blooms in March, April, and May, lasting six weeks in beauty. This makes a good plant for exhibition on account of its unusual and very distinct colour.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4302; *Paxton, Mag. Bot.*, vii. p. 193. with tab.; *Sertum Orch.* t. 28; *Orchid Album*, vii. t. 314; *L'Orchidophile*, 1888, p. 337.

L. CRAWSHAYANA, *Rehb. f.*—An interesting plant, supposed to be a natural hybrid, having ovate sulcate pseudobulbs as in *L. albida*, but somewhat flattened, and bearing one or two leaves, which are also like those of that species; the scape is elongated, as in *L. anceps*, to which the flowers, two on the scape, bear some resemblance, but the sepals and petals are narrower, and of a fine amethyst-purple colour, the anterior lobe of the lip and the tips of the side lobes being of a fine deep rosy-purple, with a white disk bearing three yellow crests, the throat also is white striped with crimson-purple. This plant was first flowered by De B. Crawshay, Esq., Rosefield, Sevenoaks; it flowers in January.—*Mexico*.

L. CRISPA.—See *CATTLEYA CRISPA*.

L. CRISPILABIA, *A. Richard*.—A very pretty plant, somewhat resembling *L. cinnabarina* in habit, though very distinct in the colour of both the leaves and flowers. It has slender pyriform pseudobulbs, tapering upwards like those of *L. cinnabarina*, each bearing a solitary light green leaf, which is of evergreen character, and from the side of which at the top of the pseudobulb grows a scape 1 foot in length, bearing about half a dozen moderate-sized flowers, which are of an amethyst or purple-lilac colour, the lip being deeper amethyst and rolled over the column at the base, white in the centre portion, with the margin of the oblong acute reflexed middle lobe of a still deeper amethyst; the disk bears three crenulate keels. It succeeds very well when grown with other kinds of *Laelia*, if afforded plenty of light, and never allowed to get perfectly dry; it grows about 1 foot high, bearing on its flower spikes four to six medium-sized delicate purple flowers, which continue in perfection for several weeks.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 6.

SYN.—*L. Lawrenceana*.

L. DAYANA, *Rehb. f.*—A beautiful and distinct dwarf compact growing species, very valuable on account of its winter-flowering propensity. It is of dwarf habit, growing about 6 inches in height, with clustered oblong somewhat clavate monophyllous stems, the leaves elliptic-oblong, fleshy coriaceous, and the scape terminal one-flowered. It is a small grower, in the way of *L. praestans*, the flowers nearly 4 inches across, the sepals and petals rosy, the lip rich purple—

magenta, the throat yellowish-white, with numerous deep purple keels. A very free-flowering species, which blossoms at the time it is making its young growth from the axil of the leaf, and lasts for three or four weeks in perfection. We find it does well in the *Odontoglossum* house with cool treatment. It is named in honour of the late J. Day, Esq., of Tottenham.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 132; *Floral Mag.*, 2nd ser., t. 249; *Gartenflora*, 1890, t. 1319.

SYN.—*L. pumila* Dayana.

L. DAYANA ALBA, *Williams*.—A very distinct form differing from the type in having white sepals and petals; lip white, veined with mauve-purple, darker than in the type. It was first flowered by the late Mr. Ward, of Southampton, in 1886.

L. DOMINIANA.—See LAELIO-CATTLEYA DOMINIANA.

L. DORMANIANA, *Rchb. f.*—A fine *Laelia*, supposed to be a natural hybrid between *Cattleya bicolor* and *Laelia pumila*. It has thin slender terete sulcate stems, bearing one or two leaves, which are cuneate oblong-ligulate, and two- to five-flowered peduncles. The flowers, which are as large as those of *C. superba*, are very distinct in form; the sepals and petals are olive-green, marbled outside with a light vinous purple; the odd sepal and the petals are prettily decorated with numerous dark port wine coloured spots round the margin; the front lobe of the lip is of a bright purplish crimson, the lateral lobes rosy crimson, distinctly veined with purplish crimson. It flowers in December and January, and probably at other seasons, as it is very free-blooming.—*Brazil*.

FIG.—*Orchid Album*, ix. t. 401.

L. ELEGANS.—See LAELIO-CATTLEYA ELEGANS.

L. EUSPATHA.—See LAELIO-CATTLEYA SCHILLERIANA EUSPATHA.

L. EUTERPE, *Rolfe*.—This is a cross between *Cattleya (Laelia) crispata* and *L. Dayana*, exhibited by Thomas Statter, Esq., of Manchester, before the Royal Horticultural Society at the Drill Hall on October 24th, 1893. In growth it somewhat resembles *L. Dayana*. Flowers $3\frac{1}{2}$ inches across; sepals and petals of a bright rosy-lilac; lip somewhat three-lobed, front-lobe crisped, crimson-purple, with a little white variegation, and veined with a deeper tint of the same colour. Flowers in autumn. Raised by Messrs. J. Veitch & Sons.—*Garden hybrid*.

L. EXONIENSIS.—See CATTLEYA EXONIENSIS.

L. EYERMANIANA, *Rchb. f.*—An interesting novelty, supposed to be a natural hybrid between *L. majalis* and *L. autumnalis*, having been imported in a batch of the first-named. The peduncle is stated "to bear four flowers equal in size to an average flower of *L. Gouldiana*. The sepals and petals are of a lovely rose-purple, with a green knob outside at the acute apex of the sepals; the petals are cuneate-oblong, blunt; lip tri-fid; side laciniae oblong, shorter than the rounded somewhat wavy mid laciniae, coloured white, border rose; there are two keels, with a third one in the middle from the base to the centre, whitish, washed with purple, and with some purple spots, suddenly constricted into three approximate yellow keels on the disk." Imported by Messrs. F. Sander & Co., who state that the smell of the flower is similar to that of *Orchis coriophora*.—*Mexico*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iv. p. 109, f. 12.

L. FINCKENIANA, *O'Brien*.—This beautiful novelty is described by Mr. J. O'Brien as follows:—"In growth the plant nearly resembles *L. autumnalis alba*, or a stout form of *L. albida*, but the leaves are broader. The flowers at first sight might be taken for a rather small *L. anceps Sanderiana*, but on examination the labellum is seen to be totally different, the ovate-oblong front lobe of the labellum being much larger, and the basal part and side lobes much shorter than in any form of *L. anceps*. The flowers are pure white, the base of the lip having some purple lines extending half-way up the side lobes, and three yellow ridges running along the lower half of the middle lobe, the front of which has a bright purplish crescent-shaped colouring and a broad white margin" (*Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 194). It first flowered in the collection of C. W. Fincken, Esq., of Hoyland Hall, Barnsley.—*Native country not stated*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiv. p. 805, f. 123; *Journ. of Hort.*, 1893, xxvii. p. 557, f. 80.

L. FLAMMEA, *Rehb. f.*—This fine distinct plant is the result of a cross between *L. cinnabarina* and *L. Pilcheriana*. It is of moderate stature, with slender cylindrical stems, each terminated by a solitary oblong-ligulate leaf, and from a compressed pale brown sheath a peduncle with three or four flowers, each 4 inches across, issues. It blooms during March and April. The sepals and petals are of a brilliant cinnabar-orange, and the lip is three-lobed, with the side lobes yellow, folded over the column, their blunt anterior ends spreading, and the central one rounded, denticulated, crispy, and of a rich crimson hue, the diskal part marked with crimson veins.—*Garden hybrid*.

FIG.—*Florist and Pomologist*, 1874, p. 133, with tab.; *Orchid Album*, v. t. 217.

L. FLAVA, *Lindl.*—A very distinct species, which has short ovate one- or two-leaved pseudobulbs, flat leathery oblong-acute leaves, and an erect scape bearing a cylindraceous raceme of eight or ten flowers, which are of a clear yellow, and have the sepals and petals linear-oblong obtuse, and the lip oblong, recurved, the side lobes plane, erect, veined with crimson, the sessile middle lobe crispy, and the disk marked by four elevated veins, divergent at the tips. The flowers last three weeks in perfection.—*Brazil*.

FIG.—*Bot. Reg.*, 1842, t. 62; *Orchid Album*, v. t. 226; *L'Orchidophile*, 1891, p. 177.
SYN.—*L. caulescens*.

L. FURFURACEA, *Lindl.*—A showy species, resembling *L. autumnalis*, but having the pseudobulbs ovate and furrowed, and the narrow oblong erect acute leathery leaves solitary or in pairs, and of a light green. The flowers are produced on upright scapes, 10 inches high, from the top of the bulb during autumn, and are individually 5 inches in diameter; the sepals are lanceolate and very acuminate, the petals sub-rhomboid and undulated, and the bi-lamellate lip three-lobed; the colour is a deep rose, the base of the lip being white. This plant is somewhat difficult to cultivate; we find it does well in pans with peat and good drainage, and suspended near the glass in the cool house.—*Mexico*.

FIG.—*Bot. Mag.* t. 3310; *Bot. Reg.*, 1839, t. 26; *Hook. First Cent. Orch. Pl.*, t. 25.

L. GIGANTEA, *Warner*.—This is one of the finest of the genus, and is a free-growing and free-flowering plant, in general habit like *L. elegans*, but having longer leaves. The flowers measure 6 inches in diameter, and are produced four or five on a scape in March and April, and continue in perfection for four or five weeks; the oblong-lanceolate sepals and broader petals are of a delicate lilac, beautifully spotted with rose-purple, the lip is three-lobed, the tips of the lateral lobes violet-rose, and the middle lobe of a deep rich magenta, the throat being white. It succeeds well with the other *Laelias*, and is very rare.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 6.

SYN.—*L. grandiflora*.

L. GLAUCA.—See *BRASSAVOLA GLAUCA*.

L. GOULDIANA.—*Reichb. f.*—This is a fine novelty, with evergreen foliage and ovate ribbed pseudobulbs, bearing usually upon the summit a pair of oblong-linear leaves; flower scape about a foot high, bearing several flowers, the sepals and petals of which are deep rosy-purple; lip the same colour, with yellow keels; it blooms during the months of December and January, and the flowers last some three weeks or more in full beauty if the plant is kept in a warm house, and the flowers are preserved from the damp.—*Mexico*.

FIG.—*Reichenbachia*, ii. t. 59; *Gard. Chron.*, 3rd ser., 1890, vii. p. 169, f. 28; *Orchid Album*, viii. t. 371.

L. GRANDIFLORA.—See *LAELIA GIGANTEA*.

L. GRANDIS, *Lindl.*—A very distinct and singular, and also a rare species, remarkable for the colour of its flowers. It grows about 1½ to 2 feet high, with clavate furrowed stems, from which rises the solitary oblong-acute, rigid, dark green leaf; the scapes are about four-flowered, and emerge from terminal oblong sheaths; they measure about 4 inches across, and have the reflexed and twisted sepals and petals of a light nankin or fawn colour, the lip white in the throat, beautifully veined throughout with magenta-rose, the middle lobe being prettily crispate undulate. It flowers during the summer, and will remain in perfection for a long time if kept from the damp.—*Brazil: Bahia*.

FIG.—*Parton, Fl. Gard.*, i. p. 60, f. 38; *Flore des Serres*, vii. p. 238, with fig.; *Id.*, t. 2473; *Bot. Mag.*, t. 5553; *Gartenflora*, t. 698; *Batem. Second Cent. Orch. Pl.*, t. 136; *Orchid Album*, iii. t. 123.

L. GRANDIS TENEBROSA, *Gower*.—A very handsome and distinct form of this old favourite. The flowers are much larger than those of the type; the sepals and petals larger and devoid of the undulate form, of a purplish-brown colour; lip large and well opened, deep purple, lighter towards the margin. It appears to vary considerably, some plants being richer and darker in colours than others.

A distinct variety has been flowered by J. W. Thompson, Esq., Walton Grange, Stone, which has been called the *Walton Grange variety*, having the sepals and petals citron-yellow, lip white veined with crimson, and a central blotch of the same colour.—*Brazil*.

FIG.—*Lindenia*, viii. t. 290; *Reichenbachia*, 2nd ser., i. t. 33; *L'Orchidophile*, 1891, f. 369; *Gard. Mag.*, 1893, Sept. 9th supplement; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 221, p. 42 (*Walton Grange var.*); *Orchid Album*, xi. t. 487.

SYN.—*L. tenebrosa*.

L. HARPOPHYLLA, *Rchb. f.*—A very handsome species, and one that should be grown in every collection. The stems are slender, terete, about 1 foot in height, bearing a solitary, lanceolate, acute leaf; the scapes are produced in a longish terete sheath from the apex of the stems, and bear from four to eight flowers, of which the lanceolate pointed sepals and petals are bright orange-vermilion, and the three-lobed lip of the same colour, margined with white. This species is far superior to *L. cinnabarina*, the flowers being larger and the colour more brilliant. This plant was well grown and flowered by Mr. Heims, formerly gardener to F. A. Philbrick, Esq., Q.C., Bickley. It flowers in February and March.—*Brazil*.



LAELIA HARPOPHYLLA.

lanceolate acute sepals, elliptic oblong-obtuse petals, and a rather small but handsomely marked lip, which has the side lobes short convolute, the tube yellow within, the yellow colour being continued on the disk, which is marked by a crest of seven elevated undulated ridges of a dark orange-yellow, the oblong front lobe whitish, with a broad beautifully denticulate border of violet-amethyst, the sepals and petals being of a brilliant amethyst. This species blooms in March, and the flowers last a long time in perfection. It is best grown in a basket with rough fibrous peat, having some charcoal mixed with the peat, and having also good drainage.—*Brazil*.

FIG.—*Bot. Mag.*, t. 6038; *Floral Mag.*, 2nd ser., t. 177; *Gard. Chron.*, 1872, p. 425, t. 128.

L. JUVENALIS, *A. Bleu*.—This hybrid *Laelia* was raised in France by M. Alfred Bleu, of Paris, and is the result of a cross between *L. Perrinii* and *L. pumila*. In growth it appears to be intermediate. The sepals are lanceolate, acute, rosy-purple; petals elongate, similar in shape to those of *L. Perrinii*, same colour as the sepals; the lip resembles *Cattleya marginata* in form, the anterior portion is violet-purple; throat pure white. Flowers in October and November.—*Garden hybrid*.

FIG.—*L'Orchophile*, 1890, p. 240 (plate).

FIG.—*Orchid Album*, iii. t. 117; *Floral Mag.*, 2nd ser., t. 372; *The Garden*, xxiv. t. 400; *Reichenbachia*, i. t. 40; *Revue Hort. Belge*, 1886, p. 109, plate; *Veitch's Man. Orch. Pl.*, ii. p. 72.

L. HORNIANA.—See LAELIO-CATTELEYA HORNIANA.

L. IRRORATA.—See LAELIO-CATTELEYA SCHILLERIANA IRRORATA.

L. JONGHEANA, *Rchb. f.*—A lovely and distinct species, which is extremely rare. It has small ovate-oblong compressed shining pseudobulbs, and oblong ligulate blunt or emarginate dark green glossy leaves; the scape is two-flowered, the flowers expanded, $4\frac{1}{2}$ inches across, with linear-

L. LAWRENCEANA.—See *LAELIA CRISPILABIA*.

L. LEEANA, *Rehb. f.*—This is a very dwarf-growing and distinct *Laelia*, supposed to be a natural hybrid. In growth it somewhat resembles *Cattleya marginata*, but the pseudobulbs and leaves are considerably longer. The flowers are very handsome, the sepals and petals being rosy-magenta, and the anterior lobe of the lip bright magenta-crimson; the lateral lobes of the lip, which enclose the column, are pale rose colour, having two magenta-crimson blotches at the tips. It flowers in September. This plant has been named in honour of W. Lee, Esq., late of Downside, Leatherhead.—*Native country not stated.*



LAELIA JONGHEANA.
(From the *Gardener's Chronicle*.)

L. LINDLEYANA, *Hort.*—A very distinct species both as regards its flowers and its manner of growth. The stems are slender elongate terete, about 8 inches high, with whitish spathaceous bracts, and the one or two leaves are linear-lanceolate, fleshy, and channelled like those of *Brassarola renosa*; the

flowers are solitary, terminal, on long deflexed peduncles, upwards of 5 inches across; the sepals and petals linear-lanceolate, bluish-white; the lip, with very short rosy-tinted basal lobes, the intermediate one $1\frac{1}{2}$ inch long, sub-rotund, concave, bluish-white, the apical part with deeper rosy flabellate veins and with a series of oblong spots along the centre in the upper half. It blooms at different times of the year, principally autumn and winter, and continues in perfection six weeks.—*Brazil: Bahia.*

FIG.—*Bot. Mag.*, t. 5449; *Batem. Second Cent. Orch. Pl.*, t. 175.

SYN.—*Cattleya Lindleyana*.

L. LOBATA.—See *CATTELEYA LOBATA*.

L. LUCASIANA, Rolfe.—A distinct *Laelia*, described by Mr. Rolfe in the *Orchid Review*, i. p. 265, as follows:—"Scape few-flowered; sepals and petals spreading, linear-oblong, sub-obtuse, 12 to 14 lines long, 3 lines broad, light-mauve purple; lip three-lobed; side lobes convolute, broadly oblong, sub-obtuse, 7 lines long, 3 lines broad; front lobe reflexed, obovate-elliptical, obtuse, very undulate, 4 lines broad, deep yellow, with the front half primrose, the lower part of the disk and side lobes deeply stained with maroon; column 3 lines long, light green, its face stained with dull purple-brown." It was flowered by Sir Trevor Lawrence, Bart., and C. J. Lucas, Esq., of Horsham, after whom it is named.—*Native country not stated.*

L. MAJALIS, Lindl.—This is a glorious plant, one of the finest of the genus, or perhaps one of the most striking of all known Orchids. It is of dwarf habit, with ovate or roundish pseudobulbs, leathery oblong solitary leaves, and one- or two-flowered peduncles bearing immense flowers, measuring between 7 and 8 inches across from the tip of the dorsal to the tips of the lateral sepals, which are lanceolate, 4 inches long, of a delicate lilac-rose, the petals being twice as broad, oblong-lanceolate, and of the same colour; while the lip is three-lobed, the side lobes small, white inside, with magenta-purple stripes, the middle lobe large, rounded, emarginate, purplish-lilac at the sides, white in the centre, marked with bold divergent blotches forming broken lines of magenta-purple. Its native name is *Flor de Mayo*. It blooms with the young growth during the summer months, and lasts five or six weeks in beauty. This plant is rather difficult to flower in some collections, but we have bloomed it successively for several years. We keep it rather dry and cool during the winter, and give it plenty of water during the growing season. It is best grown near the glass suspended from the roof, either on a block or in a basket, with little shade.—*Mexico.*

FIG.—*Bot. Reg.*, 1844, t. 30; *Bot. Mag.*, t. 5667; *Batem. Orch. Mex. et Guat.*, t. 23; *Jennings. Orch.*, t. 41; *Purton. Mag. Bot.*, xii. p. 1, with tab.; *Revue Hort. Brige*, 1883, p. 265 (plate); *Lindenia*, iv. t. 190; *Orchid Album*, viii. t. 372; *Journ. of Hort.*, 1893, xxiv. p. 129, f. 19.

SYN.—*Cattleya Grahamei*; *Bletia speciosa*; *B. grandiflora*.

L. MEASURESIANA, Williams.—A very chaste and beautiful plant, with stems 12 to 15 inches high, in some cases furnished with two ovate, oblong, obtuse leaves, sometimes with a solitary leaf only, which is oblong and acute, suggesting, as do also the flowers, that it is a hybrid between *L. elegans* and some other monophyllous species. The sepals and petals are oblong-lanceolate

acute, plane, pure white, the lip entire, and not lobed as in *L. elegans*, but beautifully frilled around the entire margin, the anterior portion rose-colour, the centre paler veined with bright magenta-purple, and the throat pure white stained with yellow. It flowers in May.—Brazil.

FIG.—*Orchid Album*, v. t. 207.

L. MONOPHYLLA, *N. E. Brown*.—A very distinct and pretty dwarf-habited species, resembling a *Masdevallia* in its growth. It has a creeping rhizome and no pseudobulbs, but short slender erect stems as thick as a crow's quill, dotted with rosy red, and having sheathing bracts; the leaves are solitary, narrow linear-oblong and bluntish, of leathery texture, deep green on the upper surface; and the continuation of the stem, which rises from 6 to 10 inches high, bears a solitary flower, 2 inches across, of a vivid orange-scarlet, the sepals and petals being alike oblong and sub-acute, and the lip minute, yellow, enclosing the column, which just shows its purple anther-cap beyond. It blossoms in September and October.—Jamaica, 3,000 to 5,000 feet altitude.

FIG.—*Bot. Mag.*, t. 6683; *Orchid Album*, ix. t. 395.

SYN.—*Trigonidium monophyllum*; *Octadesmia monophylla*.

L. "NOVELTY," *N. E. Brown*.—This hybrid is the result of a cross between *L. pumila* and *L. elegans*, and was raised by the late Dr. Harris, of Lamberhurst. It is described by Mr. N. E. Brown as follows:—"The flower is about the same size as that of *L. pumila*; the sepals and petals are light rose-purple; the latter organs being broader and more lanceolate than the sepals; the lip is entire, and similar in form to that of *L. elegans*, slightly frilled on the front margin; the sides, which are wrapped round the column, are white, and the front part is of a rich maroon-purple, and there is a broad purple stripe down the centre of the disk, under the column, which is white; pollen masses eight" (*Gardeners' Chronicle*, 3rd ser., 1887, ii. p. 490).—Garden hybrid.

FIG.—*Gard. Mag.*, 1893, p. 500.

L. PEDUNCULARIS, *Lindl.*—A charming compact-habited evergreen plant, with the habit of *L. acuminata*. The pseudobulbs are roundish ovate, compressed, rugosely wrinkled, bearing from the top a solitary oblong-obtuse leaf, and a slender scape 10 inches or a foot high, terminating in a corymbiform raceme of handsome rosy-magenta flowers, of which the sepals are lanceolate, and the petals oblong-ovate, undulated, and the lip is prominent, three-lobed, the lateral lobes short, the centre one oblong, rounded and recurved at the apex, of the same colour as the sepals, except that there is a distinct purple-crimson spot in the throat, and a small patch of creamy white just in front of it. It requires to be grown on a block or in a basket; blooms during the winter months, and lasts about a fortnight in perfection. The finest form of this species we have seen was in the collection of the late R. F. Ainsworth, Esq., M.D., Lower Broughton, under the care of Mr. Mitchell; the flowers in this case were deep rose-coloured, and 3½ inches in diameter. The figure in *Paxton's Magazine* quoted below appears to us to represent this species rather than *L. acuminata*, which name is attached to it.—Mexico.

FIG.—*Bot. Reg.*, 1845, t. 69; *Orchid Album*, iv. t. 173; *Bot. Mag.*, t. 4099; *Paxton, Mag. Bot.*, x. p. 49; with tab. (*acuminata*); *Hook., First Cent. Orch. Pl.*, t. 27.

L. PERRINII, *Lindl.*—A truly beautiful species, resembling a *Cattleya* in growth and in flower. The stems are club-shaped, scarcely a foot in height, with large solitary oblong-obtuse dark green leaves, and two-flowered peduncles from compressed purplish-green spathes. The flowers are about 6 inches across; the sepals and broader petals light magenta-rose, the three-lobed lip with the front portion intensely rich purple-crimson, which is continued round the front edges of the lateral lobes, the throat white, and the exterior of the side lobes pale rosy-lilac veined with deeper rose. It blooms in October and November, and continues in good condition for a couple of weeks. There are two varieties of this plant; one producing much larger and darker-coloured flowers, and being stronger in growth than the other.—*Brazil*.

FIG.—*Bot. Reg.*, 1838, t. 2; *Bot. Mag.*, t. 3711; *Orchid Album*, ii. t. 60; *Paxton. Mag. Bot.*, xiii. p. 5, with tab.; *Hart. Parad.*, i. t. 10; *Hook., First Cent. Orch. Pl.*, t. 20.

SYN.—*Cattleya Perrinii*; *C. intermedia angustifolia*.

L. PERRINII ALBA, *O'Brien*.—A beautiful variety with pure snow-white flowers without any purple or yellow markings. It was flowered by R. H. Measures, Esq., of Streatham.

L. PERRINII IRRORATA, *Rchb. f.*—A delicately-coloured yet attractive variety, with the general characters of the type, but differing in the colour of its charming flowers; the sepals and petals are of the palest rose colour, and the lip is nearly white, its disk, however, being of a pale yellow colour, and its apex of a light purple.—*Brazil*.

L. PERRINII NIVEA, *Rchb. f.*—A very chaste and beautiful form, first flowered in this country by ourselves, and still very rare. It resembles the type in every respect saving the colour of the flowers, which is pure white, with the exception of the lip, which is pale rosy-pink in front, and having a slight tinge of yellow in the throat. It blossoms during October and November, and lasts about two weeks in perfection.—*Brazil*.

FIG.—*Orchid Album*, iv. t. 181; *Floral Mag.*, 2nd ser., t. 429.

L. PHILBRICKIANA.—See LAELIO-CATTELEYA PHILBRICKIANA.

L. PILCHERIANA, *Dominy et Rchb. f.*—This fine hybrid was obtained in Messrs. Veitch's nursery by Mr. Dominy, between *L. Perrinii* and *Cattleya crispa*. The flowers are larger than those of the latter, the sepals oblong ligulate acute, the petals broader oblong acute, both of a beautiful French white; the lip is narrow, rolled round the column, three-lobed, the disk whitish-yellow with deep purplish veins, the anterior part very much crisped and toothed, pointed, deep purple with a white margin. Professor Reichenbach, in the *Gardeners' Chronicle*, 1868, p. 815, describes one of these hybrids as having rosy-lake flowers, so that doubtless the different seedlings vary.—*Garden hybrid*.

FIG.—*Floral Mag.*, t. 340.

L. PILCHERIANA LILACINA, *Rchb. f.*—A variety with smaller flowers than those of the type, with "the mid lobe of the lip blunter, the side lobes a little less blunt."

L. PINELLII.—See CATTELEYA PUMILA.

L. PORPHYRITES, *Rchb. f.*—A supposed natural hybrid between *L. Dormiana* and *L. pumila*. It flowered in 1886 with the late J. Day, Esq., of Tottenham. It belongs to the *L. Dayana* and *L. praestans* section. The pseudobulbs are, however, longer, and the leaves larger and broader; the flowers are somewhat smaller than *L. praestans*, and the sepals and petals narrower; the lip is different in shape, and the throat is more open; the anterior portion is rich purplish-crimson, and the sepals and petals are lilac-mauve. Flowers in November.—*Brazil*.

FIG.—*Revue Hort. Belge*, 1888, p. 37 (plate).

L. PRAESTANS, *Rchb. f.*—A splendid dwarf evergreen species, which grows 6 inches high, and often blossoms twice in a year. It has short fusiform stems (pseudobulbs), solitary oblong leaves, and short one-flowered peduncles; the flowers are large, $3\frac{1}{2}$ inches across; the sepals oblong, the petals ovate, both of a brilliant dark rose; the lip of a deep rich purple in front and around the margin, the disk and throat yellow, and the exterior of the side lobes where they are rolled over the column deep rose. This plant resembles *Cattleya marginata* in growth and in the size of its flowers. There are several varieties, some of which are much better than others. It grows best on a block with a good supply of water at the roots in the growing season. The cool house is best suited for its successful growth.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 114; *L'Ill. Hort.*, t. 193—f. *Rchb.*; *Flore des Serres*, t. 1900; *Bot. Mag.*, t. 5498; *Batem. Second Cent. Orch. Pl.*, t. 128; *Revue Hort. Belge*, 1885, p. 277 (plate); *Reichenbachia*, 2nd ser., i. t. 6; *Orchid Album*, x. t. 433.

SYN.—*Cattleya pumila major*—f. *Rchb.*

L. PRAESTANS ALBA, *Hort. Bull.*—A lovely chaste form, in which the sepals and petals are of the purest snow-white, as also are the convolute side-lobes of the lip on the exterior, the front of the lip being rich purple, with a yellow disk. Flowers in the autumn months.—*Brazil*.

L. PUMILA.—See *CATTLEYA PUMILA*.

L. PUMILA DAYANA.—See *L. DAYANA*.

L. PUMILA MAJOR.—See *CATTLEYA MARGINATA*.

L. PURPURATA, *Lindl.*—A magnificent species, often designated the King of Orchids, a title which it richly merits, as a nobler Orchid producing such large rich-coloured flowers does not exist. It grows some 2 feet high or more, and has fusiform furrowed stems, oblong emarginate light green leaves, and a peduncle bearing from three to five flowers, which are very large and showy. There are many varieties of it, all of which are well worth growing, though some are much finer than others. The recurvo-patent linear-oblong sepals and the larger oblong undulated petals are pure white, while the lip has the basal lobes folded over the column, whitish streaked with rose, the throat yellow, striped distinctly with crimson, and the broad front lobe expanded, of a rich dark crimson-purple, paler towards the tip, and marked by feathered crimson veins. In the form called *praetexta* by Reichenbach, the tip of the lip is white. In some of the varieties the flowers are of a light rose colour. It blooms during

May, June, and July, and lasts three weeks in perfection, if the flowers are kept dry.—*Brazil: St. Catherine's.*

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 40; *Parton, Fl. Gard.*, iii. t. 96; *Pescatorea*, t. 37; *L'Ill. Hort.*, t. 83; *Flore des Serres*, tt. 1138-9; *Xenia Orch.*, i. t. 61 (*practerta*); *Florist*, 1859, t. 153—f. *Rehb.*; *Gard. Chron.*, N.S., xiv. p. 45, f. 12 (flower regular); *Id.*, xx. p. 530, f. 90; *Revue Hort. Belge*, 1888, p. 201 (plate); *Lindenia*, vi. t. 282; *Reichenbachia*, 2nd ser., i. t. 25; *Veitch's Man. Orch. Pl.*, ii. p. 80.

L. PURPURATA ALBA, *Veitch*.—A delicate variety with pure white sepals and petals, lip also white veined with pale rose-colour.—*Brazil*.

FIG.—*Lindenia*, vi. t. 283.

L. PURPURATA ALBO-LILACINA, *Williams*.—A handsome light-coloured variety. Sepals and petals of good form and substance, pure white; lip deep purple at the entrance to the throat, and with a large area of white in front, faintly striped with delicate rosy-lilac; throat yellow, striped with purple.

L. PURPURATA ATRO-PURPUREA, *Williams*.—The darkest variety of *L. purpurata* we have yet met with. The sepals and petals are of a deep rose colour, the lip large and open, rich magenta-purple, this colour extending from the point of the lip far into the throat, which is orange-colour veined with dark purple. It was flowered by R. H. Measures, Esq., of Woodlands, Streatham.—*Brazil*.

FIG.—*Lindenia*, ix. t. 385 (var. *fastuosa*).

L. PURPURATA AUROREA, *Rehb. f.*—This is a form with somewhat narrow sepals and petals, white, streaked with flesh-colour; lip very dark, curiously streaked and veined. Flowers in spring and early summer.—*Brazil*.

FIG.—*Toscana d'Ortic*, 1886, t. 12.

L. PURPURATA BLENHEIMENSIS, *Williams*.—A very elegant variety. Sepals narrowly-lanceolate, rosy-lilac or blush, with darker streaks; petals ovate, much broader than the sepals, deep rosy-purple, veined with very deep purple; lip deep crimson purple, paler at the tip where it is deep rose, veined with purple. Blossoms in spring and early summer.—*Brazil*.

FIG.—*Orchid Album*, viii. t. 346.

L. PURPURATA BRYSIANA, *Hort.*—A fine, showy, and very distinct plant, a variety that makes a fine contrast to the white form of *L. purpurata*. The sepals and petals are of a beautiful light rose veined with a darker tint of the same colour, and the front lobe of the lip is dark crimson.—*Brazil*.

FIG.—*Lem. Jurd. Fl.*, tt. 275-6; *L'Ill. Hort.*, t. 134.

SYN.—*L. Brysiana*.

L. PURPURATA LOWIANA, *Rehb. f.*—This beautiful variety was described as follows:—"The very large flowers have sepals and petals rose-coloured, as in the *L. purpurata aurea*; the lip is of the very darkest, blackish mauve-purple; the light yellow at the base is nearly gone, and what is left is interrupted by dark purple veins; column purple at the top, with purple lines in front. It is wonderfully grand" (H. G. Reichenbach, in *Gardeners' Chronicle*, 1887, 3rd ser., i. p. 799).

L. PURPURATA NELISII, *Lemaire*.—A handsome and well-marked variety, having the general aspect and characteristics of the type. The flowers are large; the sepals rich rose colour on the outer surface, and as well as the petals white tinged with rose on the inside; the lip is large and prominent, and of a rich purplish crimson. It is a rare and very beautiful form, named in compliment to M. de Nélis, of Malines.—*Braz'l*.

FIG.—*L'III. Hort.*, t. 569.

L. PURPURATA PRAETEXTA, *Rehb. f.*—A very interesting and old variety which flowered as long ago as 1854 in the collection of Madame Heine, of Ottensen, Germany. Sepals and petals white; lip yellow at the base, with purple radiating stripes, front lobe dark purple, with white apex which gives it a singular aspect.—*Brazil*.

FIG.—*Xenia Orch.*, i. t. 61.

L. PURPURATA "PRINCESS MAY," *H. Williams*.—A very lovely white variety. Sepals and petals pure white; petals flat, not having the peculiar curve seen in most varieties of *L. purpurata*; lip pure white, with the faintest suspicion of rosy-purple on both sides of the entrance to the throat, which is pale yellow veined with rosy-purple.—*Brazil*.

L. PURPURATA ROSEA, *Regel*.—A fine variety, first flowered in the botanic garden of St. Petersburg, having the sepals and petals of a rosy hue; the latter have a median stripe of a darker colour, and a few veins radiating to the margins; the lip is more rosy than in the type.

FIG.—*Gartenflora*, xxi. p. 225, t. 730; *Lindenia*, vii. t. 31.

L. PURPURATA RUSSELLIANA, *Hort*.—A very distinct and elegant plant. The flowers are large; the sepals somewhat narrow, white, suffused with lilac, the petals broader and slightly deeper in colour; the lip large and rosy lilac, having a band of pale rose near the throat, which latter is light yellow, pencilled with rose. It is very rare.—*Brazil*.

FIG.—*Orchid Album*, vi. t. 263.

SYN.—*L. Russelliana*.

L. PURPURATA WILLIAMSII, *Hort*.—A splendid variety, growing about 2 feet high, and certainly one of the finest of the genus for exhibition purposes. The stems are clavate, monophyllous, the leaves leathery, narrowly oblong, and the flowers large, three or four on a scape, each bloom measuring about 8 inches in diameter; the sepals and broader petals of a beautiful delicate rose, pencilled with lines of purple, and the very large lip rich dark crimson-magenta, the tip paler and reticulately veined, and the throat yellow, beautifully veined with crimson-magenta. It blooms in May and June, and continues three weeks in perfection.—*Brazil*: *St. Catherine's*.

FIG.—*Orchid Album*, tt. 9—10.

L. RUBESCENS.—See *L. ACUMINATA*.

L. RUSSELLIANA.—See *L. PURPURATA RUSSELLIANA*.

L. SCHILLERIANA.—See *LAELIO-CATTLEYA SCHILLERIANA*.

L. SCHRÖDERII, *Williams et Moore*.—A very distinct and beautiful species, which in its growth and in the shape and size of its flowers resembles *L. grandis*. It was flowered for the first time by ourselves, and was named after Baron Sir J. H. W. Schröder, The Dell, Staines, a great admirer of this noble class of plants. The stems are clavate, about a foot and a half high, with solitary oblong leathery light green leaves, and racemes of three or four flowers, borne on a scape issuing from an oblong compressed bract or spathe. The flowers are about 7 inches across, the sepals and much broader petals pure white, and the lip white, undulated, veined towards the throat with magenta-rose, the throat itself, as well as the part inflected over the column, deep yellow veined with rose. This species has also flowered with Erastus Corning, Esq., of Albany, New York, U.S.A., under the care of Mr. Gray, the gardener. It flowers during May and June, lasting from three to four weeks in perfection.—*Brazil: Bahia*.

FIG.—*Orchid Album*, i. t. 2.

L. STELZNERIANA.—See *LAELIO-CATTLEYA SCHILLERIANA STELZNERIANA*.

L. SUPERBIENS, *Lindl.*—A noble Orchid, one of the finest of the genus. It is rather a large-growing plant, with fusiform stems, bearing a pair of oblong acute rigid leathery leaves at the top. The flower scape is 3 to 9 feet high, having sometimes on one scape from fourteen to twenty blossoms, often measuring 7 inches across; these flowers have the sepals and petals of a beautiful deep rose, somewhat paler towards the base; and the lip has the side lobes deep crimson in front, yellowish at the sides above the fold over the column, the disk yellow, with a crest of five large sub-serrate deeper orange yellow lamellae, truncate in front; the middle lobe is oblong emarginate, of a rich deep crimson, flabellately veined with deeper crimson. It blooms during the winter months, and continues long in beauty. The finest plant we ever saw of this was in the Horticultural Gardens at Chiswick; it sometimes produced as many as nine clusters of its beautiful flowers at one time; the plant was 4 feet across, with the flowering stems 7 feet in height, and was in perfect health.—*Mexico: Guatemala*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 20; *Batem. Orch. Mex. et Guat.*, t. 38; *Bot. Mag.*, t. 4090; *Parton, Mag. Bot.*, xi. p. 97, with tab.; *Flore des Serres*, tt. 1178-9; *Hook. First Cent. Orch. Pl.*, t. 23; *Orchid Album*, vi. t. 244; *Revue Hort.*, 1887, p. 324 (plate).

L. SUPERBIENS QUESNELIANA, *Williams*.—This is a handsome and noble evergreen. The growth is similar to that of the typical plant, its fusiform stems or pseudobulbs bearing a pair of rigid leathery leaves on the summit. The spike springs from between the leaves, and attains a length of over 5 feet, bearing near the apex a raceme of flowers, varying from eleven to thirteen in number, each measuring several inches across; the sepals and petals are deep rosy-purple, and the lip intense magenta-purple, with four prominent yellow crests. The flowers are produced during the months of February and March, and it continues in full beauty for a considerable time, thus proving itself very useful for winter decoration—a season when such beautiful flowers are highly appreciated, and when they are always in special request.—*Mexico: Guatemala*.

FIG.—*Orchid Album*, viii. t. 383.

L. TENEBROSA.—See *L. GRANDIS TENEBROSA*.

L. TRIOPHTHALMA.—See LAELIO-CATTLEYA TRIOPHTHALMA.

L. TURNERI.—See LAELIO-CATTLEYA ELEGANS TURNERI.

L. VEITCHIANA.—See LAELIO-CATTLEYA VEITCHIANA.

L. VIRENS, *Lindl.*—This old species is not a very showy kind, but is nevertheless worthy of cultivation as a subject for hybridizing. The growth is similar to that of *Cattleya Mossiae*; the flowers are produced several together on a spike from the apex of the pseudobulb, and are white with the faintest tinge of green when first opening. Flowers in winter.—*Brazil*.

L. VITELLINA, *O'Brien.*—A hybrid, the parentage of which has not been recorded, and which was raised in the collection of Baron Sir J. H. W. Schröder. Mr. O'Brien describes it as follows:—"The supposition is, that *L. harpophyllu* was one of the agents in its production, and the probability is that *L. Perrinii* was the other, and most likely the seed-bearer. As evidence of that, we have in *L. vitellina* an indication of the deflexed apex of the labellum as seen in *L. Perrinii*, and the influence of the orange-coloured species, which has been proved by these garden hybrids to be so potent in suppressing other colours in the species in which they are crossed, seems to have failed to wholly obliterate the dark purplish-crimson on the tip of the labellum of the other supposed parent. I have not yet had an opportunity of examining the pollinia of the new hybrid, and therefore cannot say how they stand with relation to true *Laelia*. The flowers of this beautiful novelty are orange, tinted Indian-yellow, the base of the column and tip of the labellum tinged with light purple. The plant was awarded a first-class certificate at the Royal Horticultural Society, March 14th."—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiii. p. 365, f. 53.

L. WARNERII.—See LAELIO-CATTLEYA ELEGANS WARNERII.

L. WYATTIANA, *Rchb. f.*—A lovely species, imported in a set of the short-bulbed form of *L. purpurata*, to which it is closely allied. The flowers are about the size of *Cattleya (Laelia) crispata*, and of membranous texture; the sepals and petals are white, the latter very acute, and the lip, which is similar in shape to that of *Cattleya (Laelia) crispata*, is sub-rhomboid, and undulated towards the front, has the nerves on the disk dark purple, the side ones coloured only at the base, the central ones coloured through their whole length; the side lobes are light yellow outside, the anterior lobe light purple. It flowers during the autumn. This was first flowered by the late G. Nevile Wyatt, Esq., of Cheltenham, who had a large and choice collection of Orchids, which, since his death, has been distributed.—*Brazil*.

L. XANTHINA, *Lindl.*—A very distinct and pretty species, which is also rather rare. The stems are clavate-fusiform, about a foot high, monophyllous, the leaves oblong-lorate bluntish, and the scape four to six-flowered, issuing from a linear-oblong compressed bract; the flowers are 3 to 4 inches across, the sepals and petals oblong-ligulate undulated, with the sides rolled back, yellow, more or less flushed with olive green, the lip cucullate, divided into three obtuse and shallow lobes at the apex, deep yellow with a broad front border

of white, the disk marked by a few crimson-purple veins, which are flat and not raised like a crest as in the allied *L. flava*. It flowers during May and June, and lasts for three weeks in beauty. There are two varieties of this species, one with much larger flowers than the other.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5144; *Batem. Second Cent. Orch. Pl.*, t. 180; *Orchid Album*, i. t. 23.

L. XANTHINA AGRAPHIS, *Rehb. f.*—A variety without purple markings on the lip. It was flowered by E. Wischussen, Esq., of Wood Green.

LAELIO-CATTLEYA, Rolfe.

(Tribe Epidendreae, subtribe Laelieae.)

A genus of hybrids, which have for the most part been obtained artificially between species of the two genera here named, others are supposed natural hybrids, and which, like those obtained under cultivation, appear to be defective in some portion of their generative organs. They resemble in general appearance one or other of their two parents, producing large and showy flowers. This hybrid genus was established by Mr. Rolfe, in the *Journal of the Linnean Society*, 1888, xxiv. p. 168. The same author, when writing of *Laelio-Cattleya elegans* and *Laelio-Cattleya Schilleriana* in the *Orchid Review* makes the following remarks, which we here reproduce by kind permission:—

“These two handsome Orchids are now flowering in various collections, and the receipt of several inquiries respecting them, in four instances accompanied by flowers, suggests the desirability of placing on record the following notes, as some of their varieties have been, and still are, considerably confused. Both are natives of the Santa Catherina district of South Brazil, and from a variety of considerations it is certain that both are of hybrid origin. In the district in question, three well-known species occur, and in certain localities at least they grow intermixed, or in close proximity to each other. These are *Laelia purpurata*, *Cattleya Leopoldi*, and *C. intermedia*. The former of these has stout pseudobulbs, each with a single erect longish leaf, and the flower has an entire lip, and eight pollinia; the two latter have slender stem-like pseudobulbs, each with a pair of rather short spreading leaves, and the flowers have a three-lobed lip, and four pollinia. The two latter, as is well known, are markedly different from each other in colour of their flowers, and in various details of structure. It is very interesting to observe the way

in which these characters are combined in the hybrid offspring. Some of the pseudobulbs bear a single leaf, as in the *Laelia* parent, and others a pair, as in the *Cattleya*; while as regards their shape, they are intermediate or incline towards one or the other parent. The same remark applies to the flowers, both as regards shape and colour, while the pollinia are very unequal, the lower series being much smaller than the upper, and in some cases quite rudimentary, as in all the hybrids artificially raised between these two genera. The series of natural hybrids, now in gardens, have sometimes been referred to several different types, as will be seen by the references cited below, and at others brought together as varieties of one. It is, however, certain that we have two distinct hybrids to deal with, both of which are as variable as hybrids generally are. One is the hybrid between *Laelia purpurata* and *Cattleya Leopoldi* or *Laelio-Cattleya* \times *elegans* proper, the other that between *Laelia purpurata* and *Cattleya intermedia*, or *Laelio-Cattleya* \times *Schilleriana*, sometimes incorrectly referred as a variety of the former. It is not desirable, however, that hybrids of different parentage should be confused together. We may first note *Laelio-Cattleya* \times *elegans*, otherwise *Laelia* \times *purpurata* *Leopoldi*. This was originally discovered by François De Vos, a collector for the late M. Ambrose Verschaffelt, of Ghent, on the Island of Santa Catherina, as long ago as in 1847, and flowered for the first time in Europe in the following year, when it was described as *Cattleya elegans*. Its hybrid origin was not then suspected, indeed neither of its parents were then known, which seems rather curious. This original form had the sepals and petals light rosy purple, except at the base and along the centre, which parts were light green, and the lip strongly three-lobed, the front lobe very broad, and together with the tips of the side lobes, deep violet-purple, the remainder being nearly white. This original form was afterwards called variety *Morreniana*. Round this original type the different varieties group themselves, diverging more or less in various directions. The variety *Tautziana* is near to the original type, and differs chiefly in the possession of a yellow stain on either side of the throat. *Bluntii* has rather darker colours, and the front lobe of the lip is more elongated. *Dayana* again differs in having the throat of the lip orange-yellow, like some forms of *Laelia purpurata*. The one called *prasiata* has the disk of the sepals green, and the throat sulphur-yellow, though in other respects

it conforms to the type. Allied to the last is the variety *picta*, which has many small dark purple spots on the sepals and petals, and the throat yellow. The spots are, of course, derived from *Cattleya Leopoldi*. The variety *platychila* is also nearly allied to *prasiata*, but wants the green disk to the sepals, while the lip is very broad and flat, and the lobes nearly confluent. *Houlteana* has rose-coloured flowers with a little green near the base of the sepals and petals, and some yellow on the sides of the throat. A few other varieties differ chiefly in colour, and some of them are extremely brilliant. Of these *Turneri* is characterised by its very deep colour, and the distinctly stalked obovate front lobe of the lip. The one called *Blenheimensis* is rather smaller, with the disk of the sepals lighter, the front lobe of the lip small and sessile, and the throat white. *Broomeana* and *Littleana* are both very dark varieties, but differ from *Turneri* in having the short broad front lobe of the original form. Two or three others have the sepals and petals inclining to buff or nankeen-yellow; as *incantans*, *Nyleptha*, and *Measuresiana*. In the first these organs are nankeen-yellow with the lip much as in the original form. In the second, they are sulphur-yellow faintly tinged with rose; and in the third sulphur-white, inclining to buff behind, and the lip white with crimson-purple lobes. Four other very distinct varieties remain to be mentioned. The one called *lobata* takes its name from the fact that the petals have an obtuse lobe on either side. They are washed with light brownish-purple on the margins, and the sepals have innumerable brown spots on their surface. *Brysiانا* is a very remarkable form. The sepals and petals are light green suffused with dull purple and covered with numerous small darker spots, while the lip is three-lobed and dull violet-purple in front. It appeared in 1856, but seems to have long been lost sight of. The variety *gigantea* is also very marked. It has nearly white sepals and petals which bear numerous small, rosy-purple spots, while the front part of the lip is amethyst-purple. Lastly comes *Cooksoni*, which differs from every other in having an entire lip, closely resembling that of *Laelia purpurata*. The sepals and petals are light olive-green, with some small purple spots towards the summit. *Laelia* \times *pachystele* may also belong here. It has rose-coloured sepals and petals, and a white lip with three rather narrow purple lobes.

“ We may now consider the second hybrid, *Laelio-Cattleya* \times *Schilleriana*, otherwise *Laelia purpurata intermedia*.

"This originally appeared in 1855, in the collection of Consul Schiller, of Hamburg, and was said to have been imported from Rio Janeiro, though it seems more probable that it came from the Santa Catherina district. The original form had white flowers, and an obscurely three-lobed lip, the front lobe and tips of the side lobes amethyst-purple, a purple line along the disk, and a little yellow in the throat. Round this original form a number of variations group themselves, which, if less numerous than in the preceding, have been more misunderstood, as will be seen by the undermentioned synonymy. The variety *Stelzneriana* has a nearly entire lip, as in *Laelia purpurata*, with some light yellow in the throat. The one called *cuspatha* is very similar, but has a broader lip with yellow throat, and a slight flush of pink in the sepals and petals. *Wolstenholmia* has a nearly white ground with some veins and dots of purple along the margins. The lip is narrow and nearly entire, amethyst-purple in front, with a maroon disk, and the sides much paler. *Warneri* is a form with a nearly entire lip which, like the preceding, has hitherto been referred to *L. × elegans*. The form called *Laelia × elegans alba* also belongs here, and has a three-lobed lip as in *Cattleya intermedia*. Lastly may be mentioned *Laelia × Measuresiana*, which apparently is also a variety of the present one. It has white flowers with an entire lip, rose-coloured in front, and veined with purple in the centre, and stained with yellow in the front.

"As in the preceding case, we see in the present hybrid a distinct combination of characters derived from the parent species, both in the vegetative organs and flowers, and sometimes we find the entire lip of *Laelia purpurata*, at others the three-lobed one of *Cattleya intermedia*. Considering the marked difference between *Cattleya Leopoldi* and *C. intermedia*, there should be little difficulty in distinguishing the two corresponding hybrids."

Having ourselves experienced great difficulty in determining *Laelia elegans*, and its allied forms and varieties, we think the above statement by Mr. Rolfe in a great measure solves the difficulty, and the thanks of Orchidists are due to him for having so patiently endeavoured to elucidate the mystery connected with this group of hybrids.

Culture.—Same as for *Cattleya* and *Laelia*, which see.

L. ALBANENSIS, Rolfe.—A natural hybrid imported by Messrs. Sander & Co., described by Mr. R. A. Rolfe as follows:—"The present one is also a *Laelio-Cattleya*, as is evident from its very unequal pollinia; and *Cattleya Warneri* again suggests itself as the only possible *Cattleya* parent. The second parent was evidently *Laelia grandis*, which grows in the same district. The hybrid has longer pseudobulbs than *Cattleya Warneri*, which it much otherwise resembles in habit. The flowers are nearly 5 inches in diameter; the sepals and petals light rosy-mauve; the front lobe of the lip rosy-crimson, and the disk purple-crimson, with some similar radiating veins extending towards the rosy-lilac margin. The sepals are linear-lanceolate, $2\frac{1}{2}$ inches long, and $\frac{3}{4}$ inch broad, with revolute margins; the petals rhomboid, very undulate, and $1\frac{1}{2}$ inch broad, and the lip entire, crispo-undulate, and $2\frac{1}{2}$ inches long. The smaller flowers and very undulate petals show the influence of *Laelia grandis*, while the colour approaches that of *Cattleya Warneri*. The plant is evidently intermediate between the two species named, which grow in the same country, and thus the origin of the hybrid is pretty evident. It is a very interesting and handsome plant, whose appearance throws considerable light on the habitat of *Cattleya Warneri*, which hitherto has not been clearly defined" (*Gardeners' Chronicle*, 3rd ser., 1893, xiv. p. 584).—*Bahia, Brazil*.

L. AMESIANA, Rolfe.—A splendid hybrid obtained by Messrs. Veitch & Sons, and exhibited by them in December, 1883, at one of the meetings of the Royal Horticultural Society, and dedicated to the late Hon. F. L. Ames, of North Easton, Mass., who was a great admirer of these plants and a munificent patron of horticulture. It is a cross between *Laelia crispata* and *C. maxima*, and has flowers very similar in form to those of *C. eoniensis*; the sepals and petals are blush white, the lip rich magenta-crimson. It flowers in December.—*Garden hybrid*.

FIG.—*Orchid Album*, vi. t. 253.

L. ARNOLDIANA, Rolfe.—A handsome hybrid, which is the result of a cross between *Laelia purpurata* and *Cattleya labiata*, obtained by Messrs. F. Sander & Co., who received a first-class certificate and a silver medal when exhibiting it before the Royal Horticultural Society on June 9th, 1891. The character of the flowers is chiefly derived from the first-named parent, for a variety of which, in fact, it may easily be mistaken. Sepals pale rose, suffused with purplish-rose; petals broad, of the same hue as the sepals, having a median line of rosy-purple; lip large, front lobe deep rosy-purple, veined with deep purple; throat golden yellow with radiating maroon veins.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1891, xxii. p. 491, f. 93; *Lindenia*, vii. t. 299.

SYN.—*Laelia Arnoldiana*.

L. ASCANIA, Hort. Veitch.—This fine novelty was exhibited by Messrs. J. Veitch & Sons before the Royal Horticultural Society on April 11th, 1893, and received a first-class certificate. "A distinct and handsome hybrid raised by Mr. Seden, from *Cattleya Trianae* and *Laelia xanthina*, with flowers much like those of *Cattleya labiata* in shape, but rather smaller. The sepals are sulphur-yellow in colour, the petals very much broader, white with a tinge of sulphur-yellow, and the lip similar in colour, except the front lobe, which is rich crimson" (*Orchid Review*, i. p. 167).—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvi. p. 351, f. 65.

L. "AURORA," Rolfe.—A hybrid between *Laelia Dayana* and *Cattleya Loddigesii*. The habit of the plant is dwarf; bulbs 3 to 5 inches long, furnished with a single leaf; the sepals and petals are light rosy-purple in colour; the anterior part of the lip deep rosy-purple; throat pale yellow.—*Garden hybrid*.

L. BEHRENSIANA, Hort.—A cross between *Laelio-Cattleya elegans Schilleriana* and *Cattleya Loddigesii*, exhibited by Messrs. F. Sander & Co. "The habit of the plant resembles that of *Cattleya superba*; the flowers are large; sepals and petals blush-white; the front lobe of the lip broad and flat, and of a bright rosy-crimson."—*Garden hybrid*.

FIG.—*Reichenbachia*, 2nd ser., ii. t. 62.

L. BELLA, Rolfe.—A very fine hybrid, the result of a cross between *Laelia purpurata* and *Cattleya labiata*. It was raised in Messrs. Veitch's nursery, and was first flowered by Baron Sir J. H. W. Schröder, The Dell, Staines. In its habit of growth it partakes most of the character of the last-named parent. The flowers are large; the sepals and broader petals light lilac; and the lip with a broad anterior wavy lobe of warm purple, and light purple disk. The column is white, tinged with purple at the sides; and at the mouth of the tubular portion of the lip are two oblong zones of yellowish-white, and in front of them two spots of the same colour, as in *Cattleya Warscewiczii*. It flowers in January and February.—*Garden hybrid*.

SYN.—*Laelia bella*.

L. CALLISTOGLOSSA, Rolfe.—Undoubtedly the best of the hybrid *Laelias*, being the result of a cross by Mr. Seden, between *Laelia purpurata* and *Cattleya gigas*; it was flowered in 1884 by Mr. Ballantine, gardener to Baron Sir J. H. W. Schröder, The Dell, Staines, and was exhibited by him at the Royal Horticultural Society's Meeting in March, 1884, where it was deservedly awarded a first-class certificate. The flowers in outline resemble those of *Laelia purpurata*; the sepals and petals are bright rose-colour, and the lip is 2 inches across, rich magenta-crimson shaded with mauve, the throat orange-veined with brownish-purple. It flowers in March.—*Garden hybrid*.

FIG.—*Orchid Album*, v. t. 235; *Veitch's Man. Orch. Pl.*, ii. p. 94.

SYN.—*Laelia callistoglossa*.

L. CANHAMIANA, Rolfe.—At first sight this looks like a good variety of *Laelia purpurata*, but upon closer examination it is seen to be distinct from that species. The sepals and rhomboid petals are light-rose; the lip is dark velvety-purple in its anterior wavy portion, margined narrowly in the upper part with white, and in the throat veined with brown stripes on an orange ground. This is the result of a cross between *Laelia purpurata* and *Cattleya Mossiae*.—*Garden hybrid*.

SYN.—*Laelia Canhamiana*.

L. CASSIOPE, Rolfe.—Another of Messrs. Veitch's bi-generic hybrids which they exhibited at the Drill Hall on October 24th, 1893. It is a cross between *Laelia praestans* and *Laelia exoniensis*. Pseudobulbs 2 to 3 inches long, bearing one leaf at the top; the lip resembles that of the last-named parent in shape, but is larger, deep magenta-purple; the petals are broad and flat, pale magenta-rose.—*Garden hybrid*.

L. DIGBYANA-MOSSIAE, Rolfe.—We have here a cross between *Brassarola* (*Laelia*) *Digbyana* and *Cattleya Mossiae*, raised by Mr. Seden. This beautiful hybrid is now about ten years old, and has somewhat short pseudobulbs, which carry a single leaf; in this matter of shortness of pseudobulbs it partakes of the habit of its parent, the *Brassarola*, but its flowers are of good size; the leaves are between 8 and 9 inches long, of a rich green colour, and quite destitute of the glaucous hue of the *Brassarola*; the flowers as yet are few in number upon the scape, and measure about 6 inches across, but as the plant gains in strength the flowers will in all probability increase in size; sepals linear lanceolate; petals obtusely oblong, much broader than the sepals, toothed at the edges, all being of a delicate soft rosy-lilac; lip large, about 3 inches long, not flattened out as in *Brassarola*, three-lobed, of a delicate rosy-lilac, heavily fringed round the edge of the front lobe, with a streak of crimson-lake and numerous splashes of the same colour in front; between the rosy-lilac fringed border and the throat is a zone of white, the throat in front is deep yellow, marked with radiating streaks of richer yellow, the base profusely marked with minute dots of crimson-lake.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1889, v. p. 657, f. 111; *Journ. of Hort.*, 1889, xviii. p. 421, f. 68; *Orchid Album*, x. t. 449.

L. DOMINIANA, Rolfe.—This glorious hybrid was raised in Messrs. Veitch's nursery by the late Mr. Dominy, and is the result of a cross between *Cattleya Dowiana* and a species of *Laelia*, probably *L. elegans*. It is similar in habit to *Cattleya Mossiae*, having short fusiform one-leaved pseudobulbs, but the leaves are longer, more in the way of *L. elegans*. The flowers are as large as those of that species, and splendidly coloured; the sepals and petals are bright rosy-purple, with dark reticulations, and are similar in shape and size to those of *C. Dowiana*, while the lip is of an intense and beautiful deep blood purple, the rich dark colour being carried to the margin, and the tube only showing a little of the golden venation of *C. Dowiana*. It is to be regretted that this plant, through being a hybrid, must always be scarce, as its great beauty and distinctness claim for it the premier position among the dark-flowered *Laelias*. It flowers in August.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2nd ser., t. 325.

L. DOMINIANA ROSEA, Rolfe.—A very fine hybrid *Laelia* raised by the late Mr. Dominy, probably from *L. purpurata*, crossed with *C. Dowiana*. The flowers are of moderate size, the sepals and petals are pale lilac-rose, and the lip is in the way of that of *C. Dowiana*, of a rich purple-crimson, and well crisped at the margin, $1\frac{1}{2}$ inch wide, and upwards of 2 inches long. It is very distinct.—*Garden hybrid*.

L. ELEGANS, Rolfe.—A magnificent species, usually considered to be a natural hybrid, *Laelia purpurata* and *Cattleya guttata Leopoldii* being believed to be the parents of the forms; it has slender terete clavate stems, 2 feet high or more, bearing at the top one or two linear-oblong coriaceous evergreen leaves, and a two- to seven-flowered peduncle issuing from an oblong blunt spathe. The flowers are 4 to 5 inches across, and are produced at different times of the year, lasting in perfection for about three weeks. Of this species there are many varieties, differing in the shade of colour of their flowers, which varies from white to light rose, pink, crimson, and rosy-purple. In the typical



LAELIO-CATTLEYA DIGBYANA-MOSSIAE.
(From the *Gardening World*.)

variety the sepals and petals, the latter being broader, are pale rose, and the lip, which has elongate obtuse pale-coloured side lobes encircling the column, and having a deep crimson spot near the tip, has an emarginate undulated front lobe broader than long, rather recurved to the base, and of a brilliant rose-purple.—*Brazil: St. Catherine's.*

FIG.—*Ann. de Gand*, 1848, t. 185; *Bot. Mag.*, t. 4700; *Pescatorea*, t. 48; *L'Ill. Hort.*, t. 402; *Puydt, Les Orch.*, t. 21; *Bateman, Second Cent. Orch. Pl.*, t. 156 (*Cattleya elegans*); *Lindenia*, v. t. 193; *L'Orchidophile*, 1885, p. 342; *Veitch's Man. Orch. Pl.*, ii. p. 65.

SYN.—*Cattleya elegans*; *Laelia elegans*.

L. ELEGANS ALBA, *Williams*.—A most lovely variety, and one that should be in every collection. In its habit and in the size of the flowers it resembles the best forms of *Laelia elegans*, but the sepals and petals are broad, pure white, and the front lobe of the lip is rich crimson-purple, softening off towards the tip into lilac-purple. It blossoms in June and July, lasting three weeks in perfection.—*Brazil.*

FIG.—*Orchid Album*, i. t. 30.

L. ELEGANS BLENHEIMENSIS, *Williams*.—A very grand and distinct variety. Flowers large and highly coloured; sepals oblong, acute, deep rose-colour with paler centre; petals oblong-ovate, much broader than the sepals, deep rosy-violet throughout; lip three-lobed, the side lobes white externally, the reflexed tips deep rose, the front lobe frilled on the edge, rosy-violet, passing into maroon at the base, throat white. Autumn and winter months.—*Brazil.*

FIG.—*Orchid Album*, ix. t. 393; *Reichenbachia*, 2nd ser., i. t. 20.

L. ELEGANS BLUNTII, *Rolfe*.—A very beautiful dark-flowered variety, having the sepals and petals of a bright rosy-magenta colour; the front portion of the lip is much lengthened out and is of a pure magenta-crimson; the basal portion of the lip which encloses the column is white save at the two points, which are turned upwards and are flushed with the same colour as the petals. It flowers during August and September.—*Brazil.*

L. ELEGANS BROOMEANA, *O'Brien*.—One of the handsomest of the dark coloured forms, first flowered by Jos. Broome, Esq., of Llandudno. The sepals and petals are rich deep purple, becoming paler at the base and bearing a few indistinct darker coloured spots; front lobe of the lip deep velvety-maroon, the side lobes, which are folded over the column, being creamy-white, tipped with rich maroon. Blooms during July and August.—*Brazil.*

FIG.—*Orchid Album*, ix. t. 413; *Lindenia*, viii. t. 347.

L. ELEGANS EMILIAE, *Gower*.—A plant of moderate growth; sepals and petals pure white, the petals slightly broader than the sepals; lip three-lobed, white, the recurved tips of the side lobes being blotched with mauve, middle lobe large, waved at the edges, rich magenta-purple, continued in a broad band, to the base. Flowers during the autumn months.—*Brazil.*

L. ELEGANS HOUTTEANA, *Rolfe*.—A highly-coloured variety, with broader petals and rectangular lateral lobes. It is dedicated to M. Louis Van Houtte, the founder of the horticultural establishment at Gendbrugge, Belgium.—*Brazil.*

FIG.—*Lindenia*, ii. t. 71.

L. ELEGANS INCANTANS, Rolfe.—A large-flowered form. Sepals and petals delicate fawn, suffused with violet; lip broad, the reflexed side lobes heavily tipped with rich purple, the front lobe large, deep magenta-purple. Blooms in the autumn months.—*Brazil*.

L. ELEGANS LEEANA, Williams.—This is a very lovely and distinct variety; the pseudobulbs are thicker and more clavate than those of an ordinary *Laelio-Cattleya elegans*. The flowers are $6\frac{1}{2}$ inches across, the sepals and petals being of a pale rose, beautifully suffused at the margins with rosy-magenta, in the same way as *Laelio-Cattleya elegans Wolstenholmiae*, and the lip is very large, cut at the sides, $1\frac{1}{2}$ inch across, the anterior part rosy-magenta of a very rich hue, the throat white striped in the centre with magenta. It flowers during the spring months.—*Brazil*.

L. ELEGANS MEASURESIANA, Rolfe.—“A very fine *Laelia elegans* with sulphur-coloured sepals and petals, sepals washed outside with the lightest brown-purple, leaving, however, innumerable light spots on their surface; petals bordered with purple at the top on both sides; broad central lacinia of the lip of the warmest darkest purple, as in the best *Cattleya superba*; disk between the triangular side laciniae purple, side areas white, top of the angles purple; column white with some purple lines and streaks and spots” (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 209).

L. ELEGANS MELANOCHITES, Hort. Measures.—This is a charming variety, one of the prettiest forms of this plant. The sepals and petals are light purple, the petals deeper coloured and broader than the sepals; lip three-lobed, the side lobes white, the recurved tips tinged with rose, front lobe round and broad, rosy-purple. Blooms during the autumn months.—*Brazil*.

L. ELEGANS MORRENIANA, Rolfe.—A very fine form, with flowers 6 inches across; sepals and petals magenta-rose, tinged with a shade of green in the centre and at the base; lip rolled round the column where it is white, the reflexed tips of the side lobes and the large undulate front lobe being intense magenta-crimson, having a narrow marginal belt of lilac-mauve. Flowers during the autumn months.—*Brazil*.

FIG.—*Orchid Album*, vii. t. 331.

L. ELEGANS MOSSIAE, Gower.—This is one of the very darkest flowered varieties of *Laelio-Cattleya elegans* which we know. The flowers are large, measuring 7 inches across; sepals and petals intensely deep rich crimson-purple throughout, freckled with a few reddish-crimson spots at the tips; lip deep crimson-lake, the same colour being continued round the front of the side lobes. Blooms during the autumn months.—*Brazil*.

L. ELEGANS NYLEPTHA, Rolfe.—A very handsome and distinct variety, first flowered in the collection of R. H. Measures, Esq., of Streatham, who possesses one of the most complete collections of the varieties of *Laelio-Cattleya elegans* we have ever seen. The flowers are from 6 to 7 inches in diameter; the sepals are yellow faintly tinged with rose, and minutely spotted towards the apex with purple; this also occurs on the outside; the petals are

delicate rosy-purple sparsely spotted with purple near the margins, with a broad median area of pale yellow, which broadens towards the base; the anterior lobe of the lip is bright magenta-purple, narrowly margined with pale rosy-purple. Flowers in October.—*Brazil*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iii. p. 178, suppl.

L. ELEGANS PRASIATA, *Rolfe*.—A very distinct and beautiful variety, forming an elegant companion to *Laelio-Cattleya elegans Turneri*. The flowers are of large size the sepals and petals dull magenta-rose tinged with green; the front portion of the lip is of a rich magenta-crimson veined with a deeper tint of the same colour, while the lateral lobes of the lip are pure white, and form a striking contrast to the dark portions of the flower. We have seen this variety produce from six to eight of its fragrant flowers on one spike. It blooms during September and October, and lasts for three weeks in beauty. This variety was finely flowered in the collection of Baron Sir J. H. W. Schröder, The Dell, Staines, under the care of Mr. Ballantine, the gardener.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 97.

L. ELEGANS SCHILLERIANA.—See LAELIO-CATTLEYA SCHILLERIANA.

L. ELEGANS TAUTZIANA, *Rolfe*.—"This is the grand *Laelia elegans* that has excited the admiration of so many Orchidists, the treasure of Mr. R. H. Measures, of the Woodlands, Streatham, S.W. It comes near that type with the sessile central lacinia which I proposed to call *Mooreana*, and may be grouped under it. Its very large flowers, of the brightest colour, are gorgeous. The sepals are very broad, and light purple; petals cuneate-obovate, blunt, very broad, dark purple, splendid; the lip has white lobes with very dark tips; the mid line of the disk is broad and dark purple, and there is a yellow space on each side; the mid lacinia is of the very darkest purple, and distinctly emarginate in front, the edges are crenulate on the side; column purple at the top, sulphur at the base" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 350).

L. ELEGANS TURNERI, *Rolfe*.—This is a magnificent plant, which proves quite distinct from the type in its larger flowers, richer colours, and in the different form of the lobes of the lip; the stems are elongated, terete, clavate, and the leaves in pairs, oblong, leathery, a foot long; the flowers measure upwards of 6 inches across; the sepals and petals are of a deep purple-rose, slightly veined with a darker hue, and the lip has the front lobe plane, not warted, of a deep bright magenta colour, rounded spatulate in outline, its lateral lobes white, tipped with rose. It is without exception one of the finest plants known amongst Orchids, blooming in July and August, whence it will be found an acquisition for late summer shows. It was named in honour of the late J. A. Turner, Esq., of Manchester.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 12.

SYN.—*Laelia Turneri*; *Laelia elegans Turneri*.

L. ELEGANS WARNERI, *Williams*.—A magnificent variety of *Laelio-Cattleya elegans*, which grows to about the same size as the type itself, having similar terete sub-clavate stems and oblong-obtuse leaves. The flowers are fully 7

inches across, the sepals and petals are blush-white, with the throat yellowish-purple; the lip rich crimson. It blossoms in June and July, and will last in perfection for three or four weeks. This very rare variety is one of the finest of its class, and also a fine exhibition plant.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 1.

SYN.—*Laelia elegans Warneri*; *L. Warneri*.

L. ELEGANS WOLSTENHOLMIAE.—See *L. SCHILLERIANA WOLSTENHOLMIAE*.

L. EUMAEA, *Hort. Veitch*.—This hybrid was raised by Messrs. Veitch, and exhibited by them at the Royal Horticultural Society on October 14th, 1893. It is the result of a cross between *Laelia majalis* and *Cattleya Trianae*. The petals are broad, and like the sepals, of a pale rose magenta; lip crimson purple at the tip; throat yellow, veined with orange-yellow, and bordered by a white area.—*Garden hybrid*.

L. EUSPATHA.—See *L. SCHILLERIANA EUSPATHA*.

L. EXIMEA, *Hort.*—Another of the series of hybrids raised from *Laelia purpurata* crossed with *Cattleya*. The present subject is a cross between *Laelia purpurata* and *Cattleya Warnerii*, and was raised by Mr. Seden in Messrs. Veitch & Sons' establishment. The flowers much resemble those of *Laelia purpurata*. The sepals and petals are of a pleasing rosy-purple; the lip mostly resembles in form *Cattleya Warnerii*, the colouring being intermediate between the two parents, of a bright rosy-purple; the anterior portion being much darker; throat orange-yellow.—*Garden hybrid*.

FIG.—*Lindenia*, ix. t. 336.

L. HIPPOLYTA, *Hort. Veitch*.—A lovely hybrid raised by Messrs. J. Veitch & Sons, between *Cattleya Mossiae* and *Laelia cinnabarina*. The flowers measure 5 inches from tip to tip; sepals narrow, petals 1 inch broad, both of a pleasing buff colour; the lip is partially closed, suffused with crimson at the tip and throat.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1890, xx. p. 303, f. 38.

L. HORNIANA, *Rehb. f.*—"A hybrid between *Laelia purpurata* and *L. elegans*, the latter being the pollen parent—a cross effected by Mr. Ferdinand Horn, the Orchid grower of Baron Nathaniel von Rothschild, Hohewarte, near Vienna. The bulbs are said to be nearly like those of *Laelia purpurata*, but broader, flatter, and shorter; the flower is of a very strong substance, white, sepals and narrow petals lanceolate, acute; lip most distinctly tri-lobed, side lobes obtuse-angled, mid lobe protruded, retuse; the basilar part is yellow, and there are some purple lines on the centre of the disk; the lateral lobes and the central lobe have a fine mauve tint over the good purple, and a thin white border, whilst the centre of the anterior lobe has a projecting white space as in *Laelia purpurata praetexta*. It is a lovely thing, and is dedicated to its enthusiastic cultivator" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1883, iii. p. 770).—*Garden hybrid*.

L. INGRAMII, *Hort.*—A hybrid between *Laelia Dayana* and *Cattleya Dowiana aurea*, raised by Mr. Bond, gardener to C. L. Ingram, Esq., of Godalming. The plant is of dwarf habit; the sepals and petals are rosy-mauve in colour, the latter broad and undulate; lip deep purplish-crimson.—*Garden hybrid.*

FIG.—*Journ. of Hort.*, 1892, xxv. p. 141, f. 20.

L. MAYNARDII, *Hort.*—This hybrid was raised by Mr. Maynard in the establishment of Messrs. F. Sander & Co., St. Albans, and is a cross between *Laelia Dayana* and *Cattleya dolosa*. "The plant has the dwarf habit of *Laelia Dayana*, but the flowers are larger than in that species, the labellum being expanded as in *Cattleya dolosa* and not enclosing the column; the sepals and petals are of a rosy-lilac tint, the labellum bright purplish-crimson; the column white with a purple cap. The form of the labellum is attractive, and the colouring effective" (*Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 724).—*Garden hybrid.*

FIG.—*Gard. Mag.*, 1893, p. 164 (woodcut); *Gard. Chron.*, 3rd ser., 1893, xiii. p. 715, f. 108; *Journ. of Hort.*, 1893, xxvi. p. 473, f. 85.

SYN.—*Laelia Maynardii*.

L. NORMANNI, *Kränzlin*.—One of the many crosses emanating from *Laelia pumila marginata* on the one hand, and *Cattleya Dowiana* on the other. Dr. Kränzlin describes it thus:—"The differences between *Laelio-Cattleya Ingramii* and this new hybrid are, of course, only slight, but we may observe that the petals are more rhombic instead of ovate as in *Laelio-Cattleya Ingramii*, and that the middle lobe of the lip is flatter and more plaited than in this variety. The colour of the sepals is a very tender rosy-purple, whilst the petals are somewhat darker; the lip is pale purple in the middle, with a very broad purplish-mauve margin on the side lobes, an anterior or middle lobe of the same colour; the whole discus or middle part of the lip is beautifully veined; the column is white, and has the three little teeth peculiar to *Laelia pumila*. As there are eight pollen masses (four greater and four smaller ones) the plant is, botanically speaking, a true *Laelia*; also the bulbs and leaves are more in the way of a *Laelia* than *Cattleya*-like" (*Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 98). It was raised by N. C. Cookson, Esq., of Wylam-on-Tyne.—*Garden hybrid.*

L. PACHYSTELE, *Rolfe*.—This is described by the late Prof. Reichenbach as follows:—"The flowers are equal to those of a rather good *Laelia elegans*; the petals are broader than the sepals, and wavy, wholly light rose; the lip is very narrow; side laciniae long, narrow, nearly rectangular, white, with light purple borders, broadest on the projecting angles; mid-line of the disk with a purple line from the base of the mid lacinia to the base of the lip, then divided into two shanks; mid lacinia narrow, oblong, acute, projected, rose, with darker purple veins, which looks exceedingly pretty, and which gives a peculiar aspect to the plant; column very plump, with purple on the back, and with two broad ligulate marks running from the stigma to the base; pollinia very unequal" (*Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 596). It flowered in the collection of R. H. Measures, Esq., of Streatham.—*Native country not stated.*

L. PALLAS, Veitch.—A splendid hybrid, the result of a cross between *Cattleya Dowiana* and *Cattleya (Laelia) crispata*, obtained by Messrs. J. Veitch & Sons, and exhibited by them before the Royal Horticultural Society on December 10th, 1889, and again on November 14th, 1893. Sepals pale rose, petals rosy-purple, with undulate margins; lip large, of a deep and rich maroon, edges very much frilled, and with a narrow rosy-purple margin; throat veined with orange-yellow.—*Garden hybrid*.



LAELIO-CATTELEYA PHOEBE.

(From the *Gardeners' Chronicle*.)

L. PHILBRICKIANA, Rolfe.—A cross between *Cattleya Alundiae* and *Laelio-Cattleya elegans*, raised by Messrs. J. Veitch & Sons, which is described as follows:—"The flowering bulb is only 5 inches high, two-leaved, the larger leaf being $3\frac{1}{2}$ inches long and $1\frac{1}{2}$ inch wide; the flowers are uncommonly beautiful, equalling those of a good *Laelia elegans*, as they are to be seen in Mr. Day's grand display, most probably unique in the world; the sepals and petals are light chestnut-brown, with purple spots; anterior blade of lip transverse, sub-cordate, and emarginate, of a deep rich purple, with a little white triangle to be seen in the very middle of the base, running out in a line, not to

be seen on a front view; side laciniae oblongo-triangular, whitish, with light purple borders; disk between the laciniae light purple, with a whitish middle line, and some darker purple streaks radiating outside; column very large, as in *Cattleya Aclandiae*, dark purple, only light green at base" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1879, xii. p. 102). Dedicated to F. A. Philbrick, Esq., Q.C., of Bickley.—*Garden hybrid*.

SYN.—*Laelia Philbrickiana*.

L. "PHOEBE," O'Brien.—This new hybrid was raised by Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne. It is the result of a cross between *Cattleya Mossiae* and *Laelia purpurata*. (*Laelia cinnabarina*?) The sepals and petals are rich Indian yellow; the anterior lobe of the lip being of a rich purplish-crimson.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1892, xi. p. 791, f. 114; *Gard. Mag.*, 1892, p. 268 (with fig.).

L. PISANDRA, Veitch.—A cross between *Cattleya (Laelia) crisa* and *Cattleya Eldorado*, which was shown by Messrs. Veitch at the Drill Hall on October 24th, 1893, when it was awarded a First-class certificate. The sepals and petals are pale rose, and the latter have the edges recurved; the mid lobe of the lip is long and narrow, deep magenta-purple; the throat is straw-yellow bordered by white.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvii. p. 407, f. 60.

L. PROSERPINE, Rolfe.—A charming little plant, obtained by Messrs. J. Veitch & Sons by crossing *Laelia Dayana* with *Cattleya velutina*. The flowers are large, measuring about 3 inches in diameter; sepals lanceolate-oblong, acute, of a light rose-colour, veined with purplish-rose; petals broad, rose, white at the anterior portion, spotted and streaked with purple; front lobe of lip white suffused with rose, passing into crimson-purple at the sides, veined with purple; throat yellow.—*Garden hybrid*.

L. SCHILLERIANA, Rolfe.—A fine and rare species allied to *Laelia purpurata*, and resembling *L. elegans* as regards its manner of growth. The stems are 18 inches high, and bear light green foliage 9 inches long; the flowers are showy; the sepals and petals are nearly equal, elongate lanceolate, white; the lip elongate, three-lobed, the side lobes blunt-angled, and the middle lobe oblong, minutely denticulate, the throat radiately veined with purple, and the disk sulphur-yellow, with a large curved or hippocrepiform blotch of a rich purple-crimson in front of the disk. It blooms during May and June, lasting three and four weeks in beauty, and makes a good exhibition plant on account of its showy flowers.—*Brazil*.

SYN.—*Laelia elegans Schilleriana*, *Laelia Schilleriana*; *Laelio-Cattleya elegans Schilleriana*.

L. SCHILLERIANA EUSPATHA, Rolfe.—This is supposed to be a natural hybrid between *Laelia purpurata* and *Cattleya intermedia*. We first saw flower in the collection of E. Wischussen, Esq., of Wood Green, now dis-

persed. In habit of growth it is nearest to *Laelia purpurata*. The sepals and petals are blush white, the front lobe deep purple with a light margin.—*Brazil*.

FIG.—*Reichenbachia*, i. t. 8.

L. SCHILLERIANA IRRORATA, *Rolfe*.—An elegant species, whose stems usually attain a height of 18 inches, and bear two or three leaves on the summit (monophyllous—f. *Rchb.*). The flowers are racemose, measuring about 5 inches across, the ligulate acute sepals and the cuneate oblong slightly undulated petals blush white; the lip with the lateral lobes blush-white, the rounded spreading ends tipped with rosy-pink, and the middle lobe rich crimson shaded with purple. It makes a very fine subject for exhibition, flowering in June and July, and is a plant no collection of Orchids should lack. The finest variety of this plant which we have seen bloomed in the rich collection of the late R. F. Ainsworth, Esq., M.D., at Lower Broughton, Manchester, under the care of Mr. Mitchell.—*Brazil*.

FIG.—*Xenia Orch.*, ii. t. 115, fig. 1.

SYN.—*Laelia irrorata*.

L. SCHILLERIANA IRRORATA GASKELLIANA, *Rolfe*.—A handsome variety described as follows:—"It is widely distinct from typical *Scottiana*, not in colour only, but most remarkably in the shape of the lip. The dactyloid sepals and petals are light lilac. The lip has a white mid-area between the lateral laciniae. The tips of the angles and mid-line are lilac. The heart-shaped, semi-oblong, wavy anterior lacinia has an exceedingly short nail, and the whole is of the darkest, warmest purple, with scattered and still darker bars, spots, and lines; thus making one think of *Cattleya Mossiae* and *C. speciosissima*" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, ii. p. 520).

L. SCHILLERIANA IRRORATA SCOTTIANA, *Rolfe*.—A very fine large-flowered high-coloured variety. The narrow acute sepals and narrowish acute petals are of a light rose colour, and the lip is three-lobed, the centre lobe brilliant crimson-magenta, and the throat white. It flowers in June. The variety is named in honour of H. J. Scott, Esq., Queen's Quay, Belfast, by whom it was flowered.—*Brazil*.

L. SCHILLERIANA SPLENDENS, *Hort*.—A splendid variety of *L. Schilleriana*, which grows to the same height, and bears on the top of the bulb two leaves of a light green colour. The plants flower twice a year, and produce large blossoms, of which the sepals and petals are light rose, veined with a deeper colour, and the lip is large, of a beautiful magenta, the front part light rose, and the throat yellow. It blooms in June and in autumn, and as it lasts several weeks in perfection, it makes a fine exhibition plant.—*Brazil*.

L. SCHILLERIANA STELZNERIANA, *Rolfe*.—This plant is allied to *Laelia elegans*, which it resembles in growth, but is scarcely so robust. The flowers are somewhat smaller than those of that plant, having pure white sepals and petals, the latter much broader than the former, and the lip, the lobes of which are unusually short, of a blush-white, the throat being yellowish-white, the

front lobe undulated and purple-crimson, this colour being continued along the edge as far as the tips of the side lobes. It blooms in May and June.—*Brazil*.

FIG.—*Flore des Serres*, tt. 1494-5.

SYN.—*Laelia Stelzneriana*.

L. SCHILLERIANA WOLSTENHOLMIAE, *Rolfe*.—A magnificent variety of *Laelio-Cattleya elegans*, producing light amethyst-coloured flowers, 7 inches across, in which the sepals are white marked at the edges with pale purple-rose, and the petals more deeply margined with the same colour; the lip is white at the base, with a deep purple curved blotch about the throat, and rosy-purple in front. It is very distinct in appearance, and was bloomed by the late J. Day, Esq., who dedicated it to his sister, Mrs. Wolstenholme, who is an enthusiastic lover of these beautiful plants. It usually blossoms during the autumn months.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 29; *Orchid Album*, vi. t. 285.

SYN.—*L. elegans Wolstenholmiae*.

L. STATTERIANA, *Veitch*.—A hybrid obtained by Messrs. J. Veitch & Sons between *Cattleya labiata* and *Laelia Perrinii*. It was exhibited by them before the Royal Horticultural Society on November 14th, 1893. The petals are very broad, rosy-magenta; lip rich purple in the anterior portion, basal part and throat white, slightly flushed with rosy-purple.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvii. p. 463, f. 67.

L. STELLA, *Rolfe*.—Another of Messrs. J. Veitch & Sons' hybrids, between *Cattleya* (*Laelia*) *crispa* and *Laelio-Cattleya elegans Wolstenholmiae*. The sepals and petals are of a pleasing rosy-purple shade; the lip three-lobed; anterior lobe undulate, deep violet-purple, narrowly margined with white. We have not seen this plant, but its habit is said to resemble that of *Cattleya* (*Laelia*) *crispa*.—*Garden hybrid*.

L. STELTZNERIANA.—See *L. SCHILLERIANA STELTZNERIANA*.

L. TRESEDERIANA, *Rolfe*.—A beautiful hybrid, between *Cattleya* (*Laelia*) *crispa* and *Cattleya Loddigesii*, raised in the nurseries of Messrs. Heath & Son, of Cheltenham. "The bulb is fusiform, and may be compared to that of *Laelia crispa*. I have a pencil sketch before me, showing the sheaths still covering the bulb. There are two leaves, 5 to 6 inches long by 2 inches broad, cuneate-oblong, blunt acute; the peduncle is strong, and appears to have been two-flowered; the sepals and petals have the shape of those of *Laelia crispa*, but the petals are far less wavy; they are of an elegant light rose-colour; lip cordate at the very base, expanded, tri-lobed; side lobes spreading, blunt, triangular, much shorter than broad, triangular wavy mid-lobe is deep rose-coloured, covered with dark purple reticulations; the disk of the lip is light yellow, with white margins on the side lobes; there are some purple nerves on the basilar disk; column white; two broad rows of purple spots extend in front of the column under the fovea; pollinia unequal" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 136).

L. TURNERI.—See *L. ELEGANS TURNERI*.

L. TRIOPHTHALMA, *Rolfe*.—This is a hybrid between *Cattleya superba* and *Laelia exoniensis*, raised by Mr. Seden in the nurseries of Messrs. J. Veitch & Sons,

and is described by them in their *Manual of Orchidaceous Plants* as follows :—
 “Flowers 4 to 5 inches in diameter; sepals and petals rose-purple, much paler at the base; side lobes of lip white streaked obliquely with purple; middle lobe rich amethyst-purple, with a narrow white margin and yellow disk crossed transversely by a purple streak, the basal division similarly crossed longitudinally, giving the disk a tri-partite appearance which suggested the name given to this hybrid.”—*Garden hybrid*.

SYN.—*Laelia triophthalma*.

L. VEITCHIANA, *Rolfe*.—A gorgeous hybrid, raised in Messrs. Veitch's nursery at Exeter by Mr. Dominy so long ago as 1858, and first bloomed in 1874. It is the result of a cross between *Cattleya labiata* and *Cattleya (Laelia) crispa*. The stems are short fusiform, clothed with spotted sheathing scales, and terminating in oblong dark green leathery leaves; the flowers are long, four or five on a scape, with lanceolate sepals of delicate lilac, ovate-lanceolate undulated petals of a somewhat deeper colour, and a splendidly coloured lip, of which the anterior half is rich crimson-purple, and behind this a sulphur-yellow disk, streaked with purple in the central part, the whole having a narrow pale lilac border; the lip is rather narrowed towards the apex, thus showing an approach to *Cattleya (Laelia) crispa*.—*Garden hybrid*.

FIG.—*Floral Mag.*, 2nd ser., t. 305; *Gard. Chron.*, N.S., 1883, xx. p. 142, with fig. of entire plant in supp. sheet.

SYN.—*Laelia Veitchiana*.

LAELIOPSIS, *Lindley*.

(Tribe Epidendreae, subtribe Laeliace.)

A small genus of pseudobulbous epiphytes, which have a terminal inflorescence, petals larger than the sepals, and a lip shortly adnate with the base of the column, over which its lateral lobes are folded. The latter organ is spurless, sessile, convolute, of membranaceous texture, with its veins bearded, the latter peculiarities separating the genus from *Cattleya* according to Lindley, by whom it was founded. The few species recorded, three or four in number, are West Indian.

Culture.—This very scarce plant is best grown on a block suspended from the roof, and under these conditions requires a good supply of water at the roots during the growing season. It requires rather a warm temperature while growing, and afterwards appears in a state of nature to become almost shrivelled with drought. In its habit of growth it is much like *Broughtonia sanguinea*.

L. DOMINGENSIS, *Lindl.*.—A pretty dwarf slender evergreen species, compact in growth, with short oblong pseudobulbs, bearing two oblong obtuse leathery leaves about 3 inches long, and a slender scape from the top of the bulb, attaining a height of 12 inches, and bearing a raceme of about eight

blossoms of a pretty rose-lilac colour, and produced at different times of the year, continuing in beauty for five weeks at a time. The throat is pallid,



LAELIOPSIS DOMINGENSIS.

traversed by hairy veins, of which the middle one is brownish yellow and the rest purplish.—*St. Domingo*.

FIG.—*Gard. Mag. Bot.*, iii. p. 201, with tab.; *Parton, Fl. Gard.*, iii. t. 105; *Lemaire, Jard. Fl.*, t. 172; *Orchid Album*, v. t. 199.

SYX.—*Cattleya domingensis*; *Broughtonia li'acina*; *B. violacea*.

LEOCHILUS.—See ONCIDIUM CUCULLATUM.

LEPTOTES, Lindley.

(Tribe Epidendreae, subtribe Laelieae.)

A small genus consisting of dwarf and compact-growing epiphytal pseudobulbous plants, with curious evergreen terete foliage channelled on the upper side, and flowering from the top of the pseudobulb. It is referred to *Tetramicra* by Benth. One peculiarity of these plants is the small auricle-like lateral lobes of the lip. They are of Brazilian origin.

Culture.—These plants are of easy culture, and will do either on blocks or in pots with peat suspended from the roof. They are very accommodating, for they will grow in either house, requiring a liberal supply of water in the growing season. They are propagated by dividing the plants.

L. BICOLOR, *Lindl.*—A neat and pretty epiphyte, with a creeping rhizome, from which grow up several slender stems, which are about an inch long, and almost cylindrical, and terminated by a solitary terete recurved fleshy leaf, which is grooved on the upper side. The peduncle with a solitary flower rises from the base of the leaf, the flower itself having a very long pedunculi-form ovary. The sepals and petals are linear-oblong, white, and the lip has two very short lateral lobes, and an oblong front lobe nearly as long as the petals, white, streaked with purple on the disk; it blooms during the winter months, lasting four weeks in beauty.—*Brazil*.



LEPTOTES BICOLOR.

FIG.—*Bot. Reg.*, t. 1625; *Bot. Mag.*, t. 3734 (glaucous var.); *Lindenia*, iv. t. 157.

L. BICOLOR BREVIS, *Rolfe*.—This new variety flowered with us in 1892. The sepals and petals are similar to those of the type; the lip is pure white. A very distinct and pretty little plant.—*Brazil*.

L. SERRULATA, *Lindl.*—A charming little plant, in the way of *L. bicolor*; the flowers being nearly the same in colour, the chief difference being that they are considerably larger—as much as three or four times. The stems are sometimes two-leaved, the cylindrical fusiform grooved leaves glaucous green, dotted with purple, the scapes terminal and axillary, purple, bearing the large stellate flowers on very long stalk-like ovaries; the sepals and petals are white, and the lip white, with lines of brilliant lake radiating from the base, where it has two short rounded auricles. It blooms in April and May, and lasts three weeks in perfection.—*Brazil*.

FIG.—*Sertum Orchid.*, t. 11.

LIMATODIS, *Blume*.

(Tribe Epidendreae, subtribe Bleticeae.)

A small genus of beautiful terrestrial Orchids related to *Phajus*, in which it is included by Bentham; it also closely resembles *Calanthe*. The flowers have a spurred lip rolled around the column, from which it is free, and which, according to the authors of the *Genera Plantarum*, is two-winged. It includes some species of a highly ornamental character. By a slip of the pen Lindley formerly wrote the name *Limatodes*, but has corrected it in the *Folia Orchidacea*. They are all Eastern, being found in Java, Sumatra, India, Burmah, and China.

Culture.—During the growing season these plants require a liberal supply of water at the roots—in fact, they should be kept watered till they come into flower. After they have done blooming they must be rested by withholding water. They do well in the East Indian house, and should be grown in pots with peat, leaf mould, and sand, being potted in the same manner as *Calanthe vestita*, which they resemble in growth; they also flower about the same time as that equally useful Orchid. They are propagated by dividing the pseudobulbs just when they begin to grow.

L. LABROSA, *Rehb. f.*—A very distinct species, with rosy-purple sepals and petals, lip light purple spotted with dark purple, and having a white base.—*Moulmein*.

SYN.—*Calanthe labrosa*.

L. ROSEA, *Lindl.*—A charming winter-flowering Orchid, of which there are many varieties. We have had five in flower at the same time, differing more or less from each other in their colour, which varied from white to dark rose and pink, with different intermediate shades of rose. We have few plants that are more valuable for decorative purposes during the dull season than this *Limatodia*, and it may be had in flower for months together. It is a deciduous plant, with fusiform pseudobulbs 5 or 6 inches long, much swollen at the base, and terminated by broadly lanceolate membranous ribbed leaves. The flower scapes proceed from the base of the pseudobulbs, and are nodding, attaining a height of 1 or 2 feet, bearing many flowers, which are usually of a pleasing shade of rose-pink, with a flat oblong lip, the side lobes of which are white, rolled over the column, and having a white throat surrounded by a well-defined ring of rich deep rose. The pseudobulbs, which are of a pale brownish or greyish colour, are curiously constricted in the middle part, as seen in some forms of *Calanthe vestita*.—*Moulmein*.

FIG.—*Paxton, Fl. Gard.*, iil. t. 81; *Bot. Mag.*, t. 5312.

LIMODORUM.—See PHAJUS AND SACCOLABIUM.

LISSOCHILUS, *Robert Brown*.

(Tribe Vandene, subtribe Eulophiceae.)

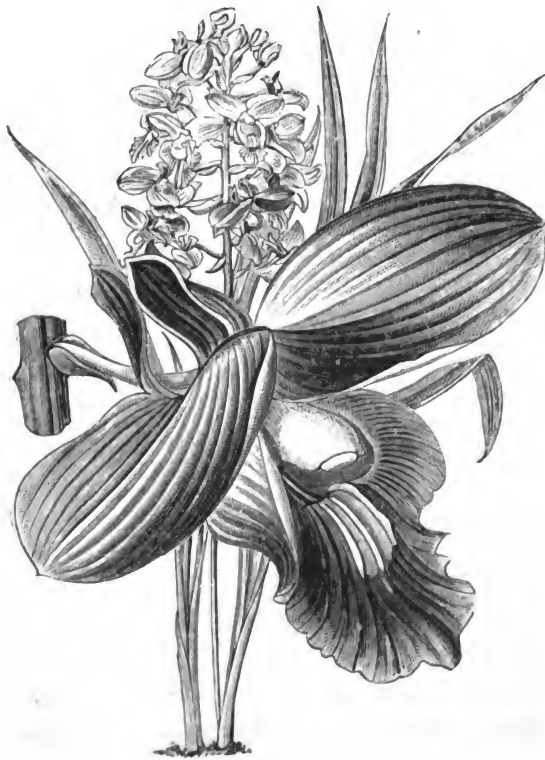
Tropical Orchids of terrestrial habit, some of which are of a very ornamental character. The flowers have the petals larger than the sepals, and spreading, and the lip is saccate at the base or produced into a conical spur. The leaves are plicate, and the flower scape is leafless. There are about thirty species of the genus known, all found in Tropical or Southern Africa.

Culture.—These are terrestrial plants, and require to be potted

in fibrous loam, and to have good drainage secured, as they need a liberal supply of water during the time they are making their growth. As they come from a tropical clime they require to be grown in a strong heat. This genus is much neglected and despised by Orchid-growers, but though we have not yet had the best species introduced to our gardens, or if they have been they have soon disappeared, some of those within the reach of Orchidists are well worth attention.

L. DILECTUS, *Rchb. f.*—A species producing flower spikes more than 2 feet high, bearing from four to ten flowers, which are said to be “rosy with a yellow mouth to the gibbous spur, which is striped with purple; base of the lip white”; the petals are very broad, oblong; lip trifold.—*Angola; Congo.*

L. GIGANTEUS, *Welwitsch.*—A truly magnificent species, the giant of the genus. It is of terrestrial habit, pseudobulb or tuber hidden below the surface



LISSOCHILUS GIGANTEUS.

of the soil, bearing oblong-acuminate, plicate leaves some 3 or more feet long, and rich green; peduncle in its wild state said to attain a height of 16 feet, but under cultivation it has not reached to more than half that altitude, bearing a raceme of some twenty to forty flowers, each of which are 3 to 4 inches across; bracts very conspicuous, cuneate-oblong, apiculate, shorter than the stalked ovaries; sepals very small, reflexed greenish; petals broadly oblong, forming quite a hood over the lip; these are bright rose colour on the outside, rosy-lilac within, with deeper coloured veins; lip trowel-shaped, three-lobed, the side lobes erect, rounded, the middle lobe 3 inches long, spreading, undulate at the sides, apiculate in front, colour rosy-lilac,

and purple round the outer border, with darker veins, and on the disk are three yellow, fleshy plates; the base is much swollen, terminating in a short, straight,

obtuse spur; column triangular, green, yellow at the base. It has been flowered successively by Sir Trevor Lawrence, Bart.; D. Tod, Esq., of Glasgow; M. le Duc de Massa, of Franconville, France, and H. Gaskell, Esq., of Woolton Wood, Liverpool. Flowers in winter.—*Congo*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iii. p. 617, f. 83; *Orchid Album*, x. t. 457.

L. GRAEFEI, *Kränzlin*.—A tall-growing vigorous species, with long lanceolate plicate leaves; flower stems 3 to 4 feet high, producing twenty or more flowers; sepals dark green shaded with dark purple-brown; petals bright yellow inside, pale yellow outside; mid lobe of lip pale yellow, side lobes violet. Named in honour of Dr. Hugo Graefe, of Streglitz, near Berlin.—*Tropical Africa*.

L. HORSFALLII, *Batem*.—This is a magnificent plant, in habit of growth resembling *Phajus grandifolius*. It has a fleshy underground tuber, from which springs a tuft of lanceolate acute distinctly stalked plaited leaves 2 to 3 feet long, and an erect terminal flower scape twice the length of the leaves, terminated by a dense elongated raceme of large and beautiful flowers; the sepals are lanceolate, undulated, reflexed, of a rich purplish-brown; the petals are much larger, white, with a delicate tint of rose; the lip funnel-shaped, purplish at the base, three-lobed, the lateral lobes large, erect, convex, green streaked with purplish-crimson, and the middle lobe bluntly ovate, of a deep puce-purple, with three white ridges on the disk running down to the base. It was received by the gentleman whose name it bears from Old Calabar.—*Tropical West Africa*.

FIG.—*Bot. Mag.*, t. 5486; *Batem. Second Cent. Orch. P.*, t. 121.

L. KREBSII PURPURATUS, *Ridley*.—This variety has conical pseudobulbs 3 inches in length, with stout roots, and broad thin plicate leaves; the flower stem is $3\frac{1}{2}$ feet high, and bears a spike of about twenty flowers, four or more of which open at a time; the sepals are dark green at the back, and deep maroon-purple in front, the margins revolute; the petals are ovate, bright yellow above, pale cream, faintly veined with red beneath, and the lip is dull orange-yellow with the lateral lobes chocolate-purple, streaked with darker lines, and the spur tipped with pink. Introduced by Mr. Heath.—*South Africa*.

FIG.—*Orchid Album*, vi. t. 259.

L. ROSEUS, *Lindl.*—A grand species of this group of terrestrial Orchids, having the stiff erect leaves broadly lanceolate and plicately veined, and the flower-scapes between 3 and 4 feet high, terminated by a dense oblong raceme of handsome lively coloured flowers, very distinct in character, each produced from the axil of an ovate bract; the sepals are spatulate in outline, concave, reflexed, of a rich deep velvety brown, the large oblong apiculate recurved petals are of a deep rose colour; and the three-lobed lip, which is roundish and longer than the petals, is also of a deep rose, and bears a conspicuous golden crest of three undulated lamellae on the disk; the under side of the lip and the conical spur is also yellow.—*Sierra Leone*.

FIG.—*Bot. Reg.*, 1884, t. 12.

L. SANDERSONI, *Rehb. f.*—A tall-growing species allied to *L. Horsfallii*. It was introduced from Natal and flowered at Kew in June, 1885. Sir Joseph

D. Hooker describes it in the *Botanical Magazine* as follows:—"Leaves 3 to 4 feet long, 3 to 4 inches broad, elongate lanceolate acute, plaited, bright green; scape 6 to 7 feet high, spike 1 foot long, producing two to six flowers, 2½ inches in diameter; sepals green, with brown edges and nerves; petals much larger, obliquely falcately broadly oblong, obtuse, pure white; lip large, contracted below into a short conoidal obtuse spur; side lobes large, rounded and incurved, very concave, dark green, with brownish veins; limb pale violet, with darker purple streaks."—*Natal.*

FIG.—*Bot. Mag.*, t. 6858.

L. SPECIOSUS, *R. Br.*—A fine showy species, having large roundish ovate underground bulbs, from which spring up a tuft of several ensiform sharp-pointed, stoutish, smooth leaves of a deep green colour; the scape comes from the side of the newly formed bulb, and is erect, many-flowered, 2 to 4 feet high, bearing the fragrant flowers in racemes 1½ foot long, the flowers themselves, which have a green bract at their base, being attractive in appearance, and from the torsion of their pedicels, being what is called resupinate, or upside down; the sepals are small, green, and reflexed; the petals oblong-ovate, 1 inch long, spreading, of a bright glowing yellow, and the lip is nearly as long as the petals, ovate-oblong, incurved, retuse, yellow, the cordate base white, feathered with purple veins. "The flowers in general begin to open at the lower part of the scape about May or June, and continue to expand upwards in succession until the latter end of July or the middle of August." It prefers rich loamy soil, and should be well drained, as in summer it must be liberally watered; and the intermediate house suits it best.—*South Africa.*

FIG.—*Bot. Reg.*, t. 578; *Parson, Mag. Bot.*, iv. p. 25, with tab.

L. STYLITES, *Rehb. f.*—A handsome species, allied to *L. roseus*, and described as follows:—"Sepals triangular acuminate, reflexed; petals oblong, wide; lip grand, square, blunt-edged, with a very short conical spur, and two styliform processes in the mouth; there are numerous dark spots on the base of the lip inside. Flowers equal to that of a good *Zygopetalum intermedium*, rose coloured" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., xxiii. p. 786).

LUDDEMANNIA.—See CYCNOCHES PESCATOREI.

LUISIA, Gaudichaud.

(Tribe Vandeeae, subtribe Sarcanthideae.)

This genus comprises few plants from Tropical Asia, but as far as we know them, they make no display in the Orchid houses, they are nevertheless very interesting plants; but as many of our growers take a great interest in these curious plants, we here include a few of the best known to us. They are small growing plants having an upright stem, and terete rush-like leaves of a deep green, bearing short spikes of dull and inconspicuous flowers, which do not last long in perfection.

Culture.—They should be grown on a block of wood, using a little sphagnum moss about their roots, suspended near the roof-glass in moderate sunshine, and treated as other plants in the East Indian house.

L. AMESIANA, *Hort.*—The growth of this species resembles that of *Vandateres*. Flowers produced in clusters at the sides of the stem about an inch in diameter; sepals and petals pale yellow, streaked and speckled with purple-brown on the outside; lip whitish-yellow with purple-maroon spots. First flowered in England by Sir Trevor Lawrence, Bart., and exhibited by him before the Royal Horticultural Society on June 20th, 1893.—*India*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiv. p. 32, f. 8.

L. PSYCHE, *Rehb. f.*—An old species discovered by the Rev. C. S. Parish, and sent by him to Messrs. H. Low & Co. In habit it resembles the preceding, but the flowers are produced mostly in pairs and remind one of those of the Bee-Orchis; they are green in colour with large spatulate petals, and a large roundish lip, which is covered by deep rich purple spots.—*Burmah*.

FIG.—*Gard. Chron.*, 1865, p. 842 (woodcut); *Bot. Mag.*, t. 5558; *Batcm. Secon. Cent. Orch. Pl.* t. 174; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 35, f. 11.

L. VOLUCRIS, *Lindl.*—This is the most curious species we have yet seen; the flowers have a resemblance to “small birds with outstretched wings”; they are produced singly from the base of the leaves; the sepals and petals are creamy-white; the lip, which resembles a lepidopterous chrysalis, is purplish-brown. This was also flowered by Sir Trevor Lawrence, and exhibited by him together with *L. Amesiana*.—*Khasia Hills*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiv. p. 32, f. 9.

LYCASTE, *Lindley*.

(*Tribe* Vandaeae, *subtribe* Cyrtopodiaceae.)

The *Lycaestes* are mostly very useful plants. All the species have short thick pseudobulbs, and ribbed or plicate leaves, and the flowers are produced from the base of the pseudobulbs on scapes about 6 inches in length, and are not only large but showy, and remarkably durable. They have somewhat ringent flowers with erecto-patent sepals, the petals are dissimilar and produced into a short chin at the base, and the lip has a transverse fleshy appendage between its lateral lobes. Several fine varieties have appeared during the past few years, chiefly belonging to *L. Skinneri*, and differing very much from each other in colour. There are some twenty-five known species, which are found in Tropical America and the West Indies.

Culture.—The plants belonging to this genus are of easy culture, if properly attended to with respect to water, of which they require a liberal supply during the growing season, especially *L. Skinneri* and its varieties. We have seen specimens of this species bearing as many as fifty blossoms, and producing a grand effect. They should be grown in a cool house, potted in peat, with good drainage, and be liberally supplied with water during the growing season; they should, in fact, never be allowed to get dry at the roots even while at rest. These plants will stand for a very long time in flower in a sitting room, and will continue in full perfection, without the slightest injury arising therefrom, but they should be grown in the warmest end of the cool house. They are propagated by division after flowering.

L. AROMATICA, *Lindl.*—A rather desirable species, on account of its free-blooming habit and fragrance. It has ovate compressed pseudobulbs, oblong lanceolate plicate leaves, and numerous erect slender one-flowered scapes about 4 inches high, growing from the base of the pseudobulbs; the flowers are golden yellow, greenish exteriorly, and the semi-cylindrical lip, which is spotted inside with orange, has the front lobe cuncate serrulate at the tip, and bears in the middle a large concave fleshy truncate appendage.—*Mexico*.

FIG.—*Hook. Erot. Fl.*, t. 219; *Bot. Reg.*, t. 1871; *Veitch's Man. Orch. Pl.*, ix. p. 84; *The Garden*, 1893, xlv. p. 394, t. 933.

SYN.—*Maxillaria aromatica*; *Colar aromatica*.

L. CINNABARINA, *Rolfe*.—An old and beautiful species, which has, however, only recently come into cultivation. It was discovered by Warscewicz in 1853, and has now been imported by the Horticulture Internationale. The flowers are produced on short scapes, and are said to be "ivory-white suffused with pale yellow or pale green; lip entire, of a deep apricot or light orange-brown tint."—*Peru*.

FIG.—*Lindenia*, ix. t. 394.

SYN.—*Maxillaria cinnabarina*.

L. CITRINA, *Hort.*—A fine robust-growing species, with the habit of *L. Harrisoniae*, and flowering about the same time. The flowers are large, thick and fleshy, and have the sepals and petals lemon colour, and the lip white marked with lilac. It is a distinct and rare plant.—*Brazil*.

L. COBBIANA, *Rehb. f.*—A curious and distinct plant having long narrow pseudobulbs. The sepals are greenish-yellow, the petals greenish-white, and the lip white, distinctly fringed. We saw a nice plant of this blooming in the large collection of W. Lee, Esq., Leatherhead, now dispersed. It flowers in September.—*Native country not stated*.

L. COSTATA, *Lindl.*—A showy and beautiful evergreen species. Pseudobulbs 3 inches high, bearing broad, plicate, deep green leaves from 1 foot to

18 inches long; the scape is produced from the base of the bulbs, bearing a single flower, several scapes springing from the same bulb; sepals and petals yellowish-white; lip white, fringed at the sides. Flowers in January and February.—*U. S. of Colombia.*

FIG.—*Gartenflora*, t. 620; *Orchid Album*, viii. t. 384; *Lindenia*, v. t. 220; *Journ. of Hort.*, 1891, xxiii. p. 197, f. 29.

L. CRUENTA, *Lindl.*—A rather desirable species allied to *L. aromatica*, but its leaves are broader and its flowers are larger, the peduncles being sometimes two-flowered; the pseudobulbs are ovate compressed rugose, the leaves oblong membranaceous, the peduncles radical, with cucullate sheaths; the flowers are 4 inches across, the sepals ovate, bright yellow inside, green without; the petals smaller of the same form, wholly yellow; and the lip much shorter than the petals, three-lobed, the lobes rounded, the intermediate one crisped and pubescent, and the appendage reduced to a small flat tubercle; it is dotted with red, and has a deep crimson blotch at its base. It flowers in abundance in March and April, and lasts three weeks in perfection.—*Guatemala.*



LYCASTE CRUENTA.

FIG.—*Bot. Mag.*, 1842, t. 13; *Orchid Album*, viii. t. 375.

SYN.—*Maxillaria cruenta*.

L. DENNINGIANA, *Rehb. f.*—A well-marked and conspicuous species, which has broadly pyriform furrowed glaucous pseudobulbs 3 inches high, cuneate oblong leaves, and flowers nearly as large as those of *L. gigantea*, having whitish green sepals and petals, the latter somewhat the smaller, and a reddish-brown lip, of which the front lobe is oblong blunt, toothletted and reflexed, and the disk bears a large rhomboid acute appendage.—*Ecuador.*

L. DEPPEI, *Lindl.*—An old but ornamental species well worthy of a place in collections. The pseudobulbs are ovate compressed, about three-leaved, the leaves oblong lanceolate plicate. The scapes which spring from the base of the bulb are one-flowered, erect, shorter than the leaves; the flowers have oblong obtuse green sepals dotted over with chocolate-purple spots arranged in transverse lines; the petals are smaller, pure white, and the lip is cucullate, three-lobed, yellow with crimson dots, the front lobe ovate acuminate reflexed,

with an ovate elevated appendage or callus. It blooms during the winter and spring months, and lasts long in beauty.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3395; *Lodd. Bot. Cub.*, t. 1612; *Hook. First Cent. Orch. Pl.*, t. 42.
 SYN.—*Maxillaria Deppei*.

L. DEPPEI PUNCTATISSIMA, *Rehb. f.*—A very large-flowered and distinct variety, in which the sepals and petals are greenish-white covered with innumerable purple spots, and the lip is yellow with dark purple radiating lines on the side lobes, and five blotches of the same colour on the anterior lobe; it flowers during the winter months.—*Guatemala*.

FIG.—*Orchid Album*, vi. t. 262.

L. FULVESCENS, *Hook.*—An interesting though not a showy species, with large broadly ovate pseudobulbs, somewhat membranous plicate lanceolate leaves, two or more from their top, and tawny yellow flowers on slender radical scapes; the flowers have lanceolate sepals $2\frac{1}{2}$ inches long, the lateral ones falcate, connate at the base into a blunt spur; the petals are similar but slightly smaller; and the orange-coloured lip is oblong, three-lobed, with an emarginate appendage on the disk, and an ovate obtuse front lobe, beautifully fringed at the margin with wavy hairs.—*U. S. of Colombia*.

FIG.—*Bot. Mag.*, t. 4193; *Hook. First Cent. Orch. Pl.*, t. 45.

SYN.—*Maxillaria fulvescens*.

L. GIGANTEA, *Lindl.*—A stately-growing plant, of which there are several varieties, some of which are inferior in beauty, though the best are well deserving a place with *L. Skinneri*. It has oblong-ovate smooth pseudobulbs some 5 or 6 inches high, bearing two or three large oblong-lanceolate acuminate plicate leaves from 1 to 2 feet long; the scapes are proportionately stout, and bear a solitary flower, which measures from tip to base fully 6 inches, and as much across; the sepals and petals are of a warm olive-green, the latter being rather the shorter, and the lip is oblong-lanceolate, three-lobed, the middle lobe panduriform, serrated at the edge, of a rich maroon-purple with a warm border of orange; the appendage to the lip is a transverse saddle-shaped emarginate callus; it blooms during the winter months.—*Central America; New Grenada*.

FIG.—*Bot. Mag.*, t. 5616; *Batem. Second Cent. Orch. Pl.*, t. 198; *Bot. Reg.*, 1845, t. 34; *Annales de Gand*, 1845, t. 9; *Orchid Album*, ix. t. 408.

SYN.—*Maxillaria Heynderyzii*.

L. GIGANTEA LABELLO-VIRIDIS, *H. Williams.*—This variety differs from the type in having a green lip.

L. HARRISONIAE, *Hort.*—An old and undeservedly neglected species, with pyriform tetragonal pseudobulbs bearing a single large oblong-lanceolate plaited leaf; the scape is one-, sometimes two-flowered, the flowers large, measuring some 3 inches in diameter; the sepals and petals large and fleshy, creamy-white, the lateral sepals being attenuated into a spur-like base; the lip purple, yellowish at the base, and marked with purple veins exteriorly, the inner surface streaked with red lines, except the orange-coloured appendage on the disk; it succeeds in a cool house, and its flowers last an immense time in perfection in a sitting-room. Reichenbach refers this species to *Bifrenaria*. The var.

grandiflora has the inner surface of lip wholly purple except a narrow yellowish border, and the spur is yellow with a few bold purple stripes.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2927; *Bot. Reg.*, t. 897; *Hook. Exot. Fl.*, t. 120; *Paxton, Fl. Gard.*, iii. p. 92, fig. 277; *Xenia Orch.*, i. t. 94; *Paxton, Mag. Bot.*, ii. p. 196, with tab. (*grandiflora*); *Hook. First Cent. Orch. Pl.*, t. 43; *Lindenia*, v. t. 239; *Gartenflora*, 1889, t. 1312; *Veitch's Man. Orch. Pl.*, ix. p. 77.

SYN.—*Mazillaria Harrisoniae*; *Colax Harrisoniae*; *Dendrobium Harrisoniae*; *Bifrenaria Harrisoniae*.

L. HARRISONIAE ALBA, *Hort.*—A neat variety, in which the habit coincides with that of the type, but the flowers of which are white; the sepals are slightly tinged with green, and the lower sides of the lateral ones faintly dotted with red; the petals are pure white, well displayed, and the lip has a white tube, the side lobes reddish-purple veined with deeper red, and the middle lobe of the same red-purple covered with short white fleshy hairs; the spur-like portion is greenish-white.—*Brazil*.

FIG.—*Gartenflora*, t. 52; *Gard. Chron.*, N.S., 1886, xxv. p. 437, f. 85.

L. HARRISONIAE EBURNEA, *Moore.*—A very chaste and beautiful variety having the sepals and petals pure white, and the lip white freely striped with crimson; the throat is yellow striped with purplish-red. It blooms during the months of April and May.—*Brazil*.

FIG.—*Orchid Album*, iii. t. 100.

L. LANIPES, *Lindl.*—A very free-flowering kind. In its habit of growth it is similar to *L. costata*. The flowers are large, produced in great quantities, pale green or greenish-white, with the lip of the same colour, its oblong obtuse front lobe serrated at the base, and the appendage blunt convex and ribbed. It is a most profuse bloomer during autumn, yielding many dozens of flowers, which are very useful for cutting, and last for a long time in perfection.—*Guayaquil*.

L. LASIOGLOSSA, *Rchb.f.*—This species appears to be intermediate between *L. Schilleriana* and *L. macrophylla*. The pseudobulbs are ovoid, compressed; leaves deep green, lanceolate, plicate; sepals narrow acuminate, greenish outside, velvety-brown inside; petals and lip golden yellow, spotted with purple.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 6251; *Lindenia*, vii. t. 316.

L. MACROBULBON, *Rchb.f.*—A species with pseudobulbs $3\frac{1}{2}$ inches by 2 inches, each producing five or six flowers. The leaves are deciduous and drop off before the period of flowering; sepals greenish-yellow; petals and lip bright yellow-orange, faintly spotted with pale brown, darker in the lip, which is hairy. It flowered in the collection of J. S. Moss, Esq., Weston Grove, Southampton, in February, 1887.—*South America*.

FIG.—*Bot. Mag.*, t. 4228.

SYN.—*Maxillaria macrobulbon*, *Hook.*

L. MACROBULBON YOUNGI, *Rolfe.*—A variety with smaller pseudobulbs than those of the type and having the lip devoid of spots. It flowered in the collection of Sir Trevor Lawrence, Bart. Of its origin nothing appears to be known.

FIG.—*Lindenia*, viii. t. 368.

SYN.—*L. Youngi*.

L. MACROPHYLLA, *Lindl.*—A distinct-coloured species, with large ovate ribbed pseudobulbs, ample lanceolate plaited leaves, and bold flowers, of which the sepals are olive-green, and the petals, which are nearly as long as the sepals, and broadly rounded and undulated at the extremity, are of a pale nankin-tinted sulphur; the lip is also of the same tint of pale sulphur with purplish spots on the edges of the lobes, and has a tongue-shaped appendage.—*Peru : Caraccas*.

FIG.—*Annales de Gand*, 1848, t. 221.

SYN.—*Maxillaria macrophylla*.

L. PLANA, *Lindl.*—A rather showy species, with large ovate-oblong ribbed pseudobulbs, bold oval lanceolate plicate leaves, and handsome flowers some $3\frac{1}{2}$ inches across, having flat oblong spreading sepals of a fine madder red, smaller white petals, with a rosy-crimson blotch, having in it an eye-like spot of white on their recurved tips, and a still smaller white lip spotted with rosy-crimson, the roundish front lobe serrated, and the appendage oblong blunt and obscurely three-lobed. We saw this plant well flowered in the collection of R. H. Measures, Esq., Woodlands, Streatham. Mr. Measures also has a variety with a pure white lip, and another with a bright rose-coloured lip. It flowers during the winter.—*Bolivia*.

FIG.—*Bot. Reg.*, 1843, t. 35; *Orchid Album*, v. t. 230.

L. PLANA MEASURESIANA, *Williams*.—A handsome variety which has the sepals reddish-brown, the petals pure white, spotted in the centre with bright crimson, the lip white, spotted towards the base with crimson. In growth it resembles the type. It is dedicated to R. H. Measures, Esq., of Streatham.—*Bolivia*.

FIG.—*Orchid Album*, vii. t. 306.

L. ROSSIANA, *Rolfe*.—A neat and pretty species, which flowered in the collection of H. J. Ross, Esq., of Florence. It is said to be allied to *L. cruenta*, "but the flowers are smaller, and the lip is without the basal cavity and the broad transverse maroon band seen in that species" (*Orchid Review*, i. p. 239).—*Native country not stated*.

L. SCHILLERIANA, *Rehb. f.*—A free-growing plant, with the habit of *L. gigantea*, but a more desirable species. The pseudobulbs and foliage are like those of *L. Skinneri*, but the leaves are more erect; the scapes supporting the flowers are about 6 inches in height; the sepals are spreading, about 4 inches long, greenish-brown, the petals smaller, very pure white, converging over the base of the lip, the latter being pure white in front, and with a slight tinge of yellow at the base. The flowers are set on the stalk as in *L. Skinneri*, that is, they look the observer in the face, and not as in *L. gigantea*, in which they look down at the pot in which the plant is growing.—*Central America*.

FIG.—*Gartenflora*, 1890, t. 1321.

L. SCHÖNBRUNNENSIS, *Hort. Vindob.*—This is one of the few hybrids which have been raised in this genus; one of its parents was *L. Skinneri*, while the other is supposed to be *L. Schilleriana*. It flowered in the Imperial Gardens at Schönbrunn, near Vienna. "The sepals are oblong-lanceolate, acute, about

2½ inches long, rose-pink, with a distinct glaucous surface; the petals are yellowish-white at the base, suffused with light pink above, lanceolate oblong, acute, and rather under 2 inches long; the three-lobed lip has a light yellow ground, the crest and side lobes densely spotted and freckled with light purple-crimson" (*Orchid Review*, i. p. 51).—*Garden hybrid*.

L. SKINNERI, *Lindl.*—A beautiful and free-flowering species, and one of the most striking ornaments of our Orchid houses. It has oblong-ovate compressed pseudobulbs, oblong-lanceolate membranous plaited leaves, and single-flowered radical scapes like most of the other species; the flowers are very large, 5 to 7 inches across, and of a fleshy texture, the sepals oblong-lanceolate acute, spreading, bluish-white, the petals are about half the length, ovate, erect, convolute over the column, with the tips reflexed, more or less deeply tinted with rose, and the lip is three-lobed, the middle lobe roundish ovate deflexed, wavy at the edge, white spotted with deep rose-red or crimson, the appendage forming a large fleshy tongue-shaped callosity on the disk. It blooms during the winter months, lasting a long time in beauty. This plant ought to be in every collection, as it is one of the finest we have for winter blooming, its large numerous singularly-formed and richly-coloured flowers rendering it at that season peculiarly attractive. There are a good many varieties, several of which have been named, and a selection of which we give below.—*Guatemala*.



LYCASTE SKINNERI.

FIG.—*Bot. Mag.*, t. 4445; *Bateman, Orch. Mex. et Guat.*, t. 35; *Paxton, Mag. Bot.*, xi. p. 1, with tab.; *Flore des Serres*, tt. 303, 304; *Pescatorea*, t. 39; *Sieb. Fl. Jard.*, 1862, t. 3; *Jennings, Orch.*, t. 9; *Floral Mag.*, t. 192; *Puydt, Les Orch.*, t. 22 (*rubra*); *Reichenbachia*, i. t. 41; *Veitch's Man. Orch. Pl.*, ix. p. 94.

SYN.—*Maxillaria Skinneri*; *M. virginalis*.

L. SKINNERI ALBA, *Hort.*—A very fine and chaste variety, with flowers of full average size, and well expanded; the sepals and petals are of a pure white colour; the lip is also white with the faintest tinge of yellow about the centre, the tongue-shaped appendage being wholly yellow. A most desirable plant.—*Guatemala*.

FIG.—*Floral Mag.*, 2nd ser., t. 35, fig. 1; *Pescatorea*, t. 39, right-hand fig. (smaller form); *Revue Hort. Belge*, 1884, p. 97 (plate); *Orchid Album*, v. t. 234; *Reichenbachia*, i. t. 41; *Lindenia*, iv. t. 153; *Gard. Chron.*, 3rd ser., 1890, vii., Apl. 5th (suppl.); *Orchid Review*, i. p. 113, f. 8.

L. SKINNERI AMABILIS, *Williams.*—A very large and handsome variety, having flowers 6 inches in diameter; the sepals are about 2 inches in breadth, of a pale rose colour, the petals broad, of a rich magenta, and the lip white, indistinctly blotched with pale rosy-purple.—*Guatemala*.

L. SKINNERI ARMENIACA, *Hort. Sander*.—This novel and distinct variety was first flowered by Reginald Young, Esq., Fringilla, Sefton Park, Liverpool, and was exhibited by him before the Royal Horticultural Society, March 15th, 1890, when it was unanimously awarded a first-class certificate. It differs from the type in having the sepals, petals, and more especially the lip, suffused with a delicate tint of apricot colour.—*Guatemala*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 18.

L. SKINNERI DELICATISSIMA, *Warner*.—A distinct and handsome variety, the large flowers measuring 6 inches across; the sepals are blush white, the petals more deeply flushed with rosy pink, and the lip creamy-white spotted with rose, the appendage being more distinctly yellow, and tongue-shaped; it blooms in February, and continues in perfection six weeks.—*Guatemala*.

FIG.—*Warner*, *Scl. Orch. Pl.*, i. t. 10, f. 1; *Revue Hort. Belge*, 1889, p. 73, t. 7.

L. SKINNERI GLORIOSA, *Williams*.—A fine and handsome variety of this beautiful winter-blooming Orchid; the flowers are 7 inches across; the sepals being very broad, of a pale pink colour, whilst the petals are rich rose colour, especially on the inner surface, and the lip is large, white, marked faintly with rose.—*Guatemala*.

L. SKINNERI "MR. F. L. AMES," *O'Brien*.—A handsome variety with large flowers "with a slight blush hue on the sepals and with rich crimson feathering up the margins of the petals."

L. SKINNERI "MRS. F. L. AMES," *Hort*.—The sepals in this variety are described as "white tinted with salmon colour; the petals salmon colour with an orange tint at the base; the lip at the base and side lobes Indian-yellow, front lobe creamy-white, freckled with yellow."

L. SKINNERI NIGRO-RUBRA, *Hort*.—A very handsome deep-coloured variety, bearing flowers of the largest size, with the broad spreading ovate sepals of a deepish mauve colour or lilac-rose, the petals of a rich puce-purple or plum colour, and the lip with deep rose side lobes and a front lobe of deep sanguineous purple, the appendage being yellow. Very fine.—*Guatemala*.

FIG.—*Floral Mag.*, 2nd ser., t. 35, f. 2.

L. SKINNERI PICTURATA, *Warner*.—A choice and showy variety, having flowers 7 inches across. The sepals are blush, strongly tinged with rose near the base and along their centre; the petals are white, the basal part flushed with pink and striped with rosy-lake; and the lip is creamy white, the front part spotted with purple-crimson and the basal part bearing an appendage or blotch of deep purplish-crimson.—*Guatemala*.

FIG.—*Warner*, *Scl. Orch. Pl.*, i. t. 10, f. 2.

L. SKINNERI PURPURATA, *Warner*.—A strikingly bold and handsome variety, with large flowers, of which the sepals are oblong acute and of a faint blush-white; the petals similar in colour but smaller; and the lip wholly of the richest crimson-purple, with a purple appendage.—*Guatemala*.

FIG.—*Warner*, *Scl. Orch. Pl.*, i. t. 10, f. 3.

L. SKINNERI PURPUREA, *Hort.*—A beautiful variety with large flowers, having the sepals delicate rose; the petals of a darker shade densely spotted and veined with bright maroon-purple; lip pure white except at the side lobes, which are somewhat spotted with rose at the borders.

FIG.—*Lindenia*, viii. t. 379.

L. SKINNERI REGINAE, *Williams.*—An exceedingly beautiful variety, producing large flowers, measuring quite 7 inches across. Sepals white flushed and streaked with a lovely rosy-lake; petals purplish-crimson, passing into violet towards the base; lip rich deep crimson.—*Guatemala.*

FIG.—*Orchid Album*, vi. t. 283.

L. SKINNERI ROSEA, *Williams.*—A magnificent variety, having very large flowers, these being quite 7 inches in diameter. The sepals and petals are rich dark rose, and the lip white, spotted with crimson. This is one of the finest varieties we have seen, and it lasts six weeks in beauty.—*Guatemala.*

L. SKINNERI ROSEO-PURPUREA, *Williams.*—A large-flowered and handsome variety, the flowers being 7 inches in diameter. The sepals and petals are bright rose colour, and the whole of the lip of an intense magenta-crimson.—*Guatemala.*

L. SKINNERI SUPERBA, *Moore.*—A splendid variety, of a very showy character, and very distinct. The flowers are large and attractive, the sepals being of a delicate rose or deep blush, deeper at the base, the petals are intense rich rosy-crimson, and the lip white, with a blotch of crimson on each of the lateral lobes, and having the tongue-like appendage clear yellow.—*Guatemala.*

FIG.—*Floral Mag.*, t. 24.

L. SKINNERI VESTALIS, *Williams.*—A remarkably fine variety, with flowers 7 inches across, almost rivalling those of *L. Skinneri alba* in purity of colouring. The sepals, which are $1\frac{1}{2}$ inch wide, are pure white, the petals are also white, with a faint venation of pale rose on the inner face, and the lip is pure white, with very faint markings of pale rose.—*Guatemala.*

L. SMEEANA, *Rehb. f.*—A very interesting plant, which it has been suggested is probably a hybrid between *L. Skinneri* and *L. Deppei*, to which latter it bears considerable resemblance in its pseudobulbs and manner of growth. The colour of the flower is white, excepting the lip, which is bordered with light purple and spotted over its entire surface; the appendage of the lip is short, with an obscure central keel. It was first flowered by A. H. Smee, Esq., of Carshalton, and was named in compliment to him by Prof. Reichenbach. It flowers during the autumn and winter months.—*Guatemala.*

L. YOUNGI.—See *L. MACROBULBON YOUNGI.*

MACODES, *Blume.*

(Tribe Neottieae, subtribe Spirantheae.)

A beautiful genus of variegated tropical Orchids, allied to *Anoectochilus*, which it closely resembles, but from which it differs in its spurless

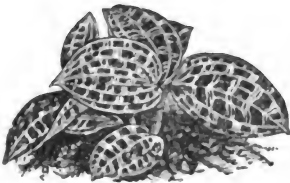
sessile lip, with a three-lobed limb, the front lobe of which is linear spatulate. The only species is a native of Java and Borneo.

Culture.—The treatment is in every respect similar to that of *Anoectochilus*, which see.

M. JAVANICA.—See *ANOECTOCHILUS JAVANICUM*.

M. MARMORATA.—See *DOSSINIA MARMORATA*.

M. PETOLA, *Lindl.*—One of the finest of the *Anoectochiloid* group, which has the further merit of being very free-growing, and easy to increase. Of this there are two varieties, one inferior to the other, but both of them handsome; it grows about 4 inches high, and has oval acute leaves 3 inches long, and 2 inches broad, the ground colour lustrous, and resembling light-coloured green velvet, enriched with well-defined netted lines and bands of a pale or yellowish hue, deepening to a golden hue, and covering the whole surface; the flowers grow in racemes, terminating an erect scape 8 to 10 inches high, and are pale reddish-brown outside, whitish within. It is a very charming species.—*Java; Borneo*.



MACODES PETOLA.

FIG.—*Xenia Orch.*, i. t. 96, f. 1; *Blume, Orch. Arch. Ind.*, t. 31, f. 2; *Id.*, t. 36.
 SYN.—*Anoectochilus Petola; Anoectochilus Veitchii; Neottia Petola*.

MACROCHILUS.—See *MILTONIA SPECTABILIS*.

MASDEVALLIA, *Ruiz et Pavon*.

(Tribe Epidendreae, subtribe Pleurothalleae.)

Of this very interesting genus of cool Orchids, we have many charming and beautiful species, thanks to the efforts of our Orchid collectors. Some of the species are very distinct and brilliant in colour, which renders them especially valuable for decorative or exhibition purposes—we refer to such sorts as *M. coccinea*, *M. Lindeni*, *M. Veitchiana*, *M. Harryana*, *M. Davisii*, and others, which furnish colours that add much to the brilliancy of the display in our Orchid houses when they are in flower, and enrich our collections by the contrast they afford to other types of this wonderfully varied family. The plants are tufted-growing epiphytes without pseudobulbs, but having a creeping rhizome, from which the short one-leaved stems grow up, the leaves being thick and leathery in texture, and tapered at the base into a petiole; the peduncles which grow up with the petioles are one- or less frequently

many-flowered. The peculiar feature of their flowers is that the three sepals are connivent into a tube, less frequently free to the base, the points of the sepals being extended into a tail-like form, and the petals and lip are usually small and inconspicuous. They are natives of Tropical and Central America, more than a hundred species having been discovered, most of them within the last few years. In addition to the species, varieties, and hybrids enumerated below, there are, besides, a large number of species known to us which we do not consider of sufficient interest to Orchid growers to describe them in these pages.

Culture.—The *Masdevallias* are beautiful neat-growing plants, and should be in every collection, for they occupy but little space, and are both free-blooming and free-growing, provided they get the treatment they require. They were for a long time grown in too much heat by the majority of Orchid cultivators, but are found to grow best in the cool house with and under the same treatment as *Odontoglossums*. They should be potted in peat and sphagnum moss, with good drainage, and always kept moist at the roots, though never allowed to get soddened by the presence of bad soil or deficient drainage, which is too often the case with these plants. It is a good plan to keep live sphagnum about the roots, which not only looks neat and pleasing to the eye, but is an index to the sweetness of the soil beneath, and an indication that it has not become soddened by excess of stagnant water. Thus grown in a cool house they will produce a profusion of flowers, and will sometimes bloom twice during the year.

Masdevallias require, however, considerable attention and care to keep them in good order, being subject to the attacks of the red thrips, which, if allowed to accumulate, will soon disfigure the foliage and cause the plants to dwindle away; it is, therefore, necessary to keep a watchful eye to prevent the intrusion of these pests, and to well wash the plants whenever the first trace of them is seen. The plants should be placed as much in the light and as near the glass as possible, but shaded from the sun, and water should be freely given to them.

M. AMABILIS, *Rchb. f.*—A very pretty species, forming dense tufts of obovate-oblong obtuse emarginate leaves, about 5 inches long, on terete channelled footstalks which are closely sheathed at the base, and one-flowered peduncles nearly twice the height of the leaves, bearing flowers of which the perianth tube is orange-carmine above, white tinged with pink beneath, the

lobes being of a bright rosy-carmine, the upper one triangular, terminating in an erect filiform appendage (tail), and the side ones broader oblique ovate decurved, and ending in similar appendages. This is a very free-blooming species, and although somewhat small-flowered it is nevertheless very pretty in a mass. Flowers in summer.—*Peru*.

FIG.—*Woolward's Mand.*, i. t. 1; *Vitch's Man. Orch. Pl.*, v. p. 24.

M. AMABILIS LINEATA, *Linden*.—Equally as free flowering as the typical plant, and even more beautiful; the throat and upper sepal are orange-yellow, the upper sepal being streaked with three narrow straight purple lines, the lower sepals are also streaked each with three broader curved lines of purple. Blooms in May.—*Peru*.

FIG.—*Rev. Hort. Belge*, 1883, p. 25 (plate); *L'Ill. Hort.*, 3rd ser., t. 196.

M. ARMINII, *Rchb. f.*—A pretty little species in the way of *M. Wageneriana*, the flowers being larger and of a fine rose-colour tinged with purple; it was first introduced in 1854 by Schlim.—*New Grenada*.

FIG.—*Woolward's Mand.*, iii. t. 21; *Journ. of Hort.*, 1891, xxii. p. 409, f. 74; *Gard. Mag.*, 1893, June 17th (suppl.).

M. ASTUTA, *Rchb. f.*—This species is allied to *M. Gaskelliana*, and was collected by Mr. Carder in Costa Rica. "It has leaves nearly a span long, petiolate, oblong acute, nearly 1 inch long in their widest part, the sepals distinctly triangular with brown tails, surpassing the length of the rest of the sepal at least twice, simply brown, and yellow at the apex and centre outside, ochre-coloured with numerous brown blotches inside, hispid there all over; petals rather blunt; anterior saccate part of the lip ascending at the top, toothletted at the side, with three longitudinal keels, and numerous small transverse bars outside the column with a long beak" (*Gardeners' Chronicle*, n.s., 1886, xxvi. p. 584).—*Costa Rica*.

M. ATTENUATA, *Rchb.*—This although scarcely showy is yet remarkable as being one of the few white-flowered species. It is a dwarf, tufted plant, with oblong ovate, spreading leaves, which are petiolate at the base, some 4 inches long, leathery, deep green, persistent; scape shorter, or about as long as the leaves; flowers solitary, downy on the inside, these are white with long yellow tails; lip small, yellow. Flowers in the winter months.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 6273.

M. BACKHOUSIANA.—See *M. CHIMAERA BACKHOUSIANA*.

M. BELLA, *Rchb. f.*—A very beautiful and distinct species of the *Chimaera* group, discovered by Mr. Wallis. The leaves are densely tufted, cuneate-oblong, with truncate bracts sheathing the stalkless base; the flowers are produced upon drooping peduncles, and on the inner surface are yellow, irregularly and densely spotted with purplish-brown on the dorsal sepal and the outer half of the lateral sepals, the tails being from 3 to 4 inches long, and also of deep purplish-brown; the base of the dorsal sepal and the interior sides of the lateral ones are ochre-yellow; the reniform clawed lip is pure white, and the lamina entirely covered with radiating lamellae; the exterior surface of the flowers is





MASDEVALLIA BELLA.
(From the *Gardeners' Chronicle*.)

of a shining dull deep purple. It flowers during the autumn months.—*New Grenada*, 8,000 feet elevation.

FIG.—*Floral Mag.*, 2nd ser., t. 433; *Gard. Chron.*, N.S., xiii. p. 756, f. 131—2; *Id.*, xvi. p. 236, f. 50; *Belg. Hort.*, 1884, t. 3; *Lindenia*, vi. t. 257; *Woolward's Masd.*, i. t. 2; *Veitch's Man. Orch. Pl.*, v. p. 26.

M. BODDAERTII, *Linden*.—This species is named after the late Dr. Boddaert, of Ghent, once a great enthusiast amongst Orchids. It was introduced by Mr. Linden, who considered it to be a variety of *M. ignea*, but we cannot agree with him in this, as both the foliage and flowers are more nearly akin to the old *M. coccinea*. In fact we consider it may possibly be a gigantic free-flowering form of that species, or if not, to be very closely allied to it. The leaves are of leathery texture, lanceolate obovate, with sheathing truncate scales at the base; the flowers are solitary on tall peduncles, and are about $2\frac{1}{2}$ inches long by 2 to $2\frac{1}{2}$ inches broad, very flat, and of fine substance, the decurved filiform dorsal lobe of the perianth, as well as the throat and lower portion of the ovate acute (not tailed) lateral sepals, are yellow, gradually passing to a bright crimson-scarlet more or less mottled with yellow, the broader segments having three distinct crimson veins or stripes extending from the base to the apex. It flowers in April and May.—*New Grenada*.

FIG.—*L' Ill. Hort.*, 3rd ser., t. 357.

SYN.—*M. ignea Boddaertii*.

M. CANDIDA.—See *M. TOVARENSIS*.

M. CARDERI, *Rehb. f.*—The leaves are narrowly spatulate, some 4 or 5 inches long, deep green; scape very slender terete, pendent, bearing a solitary little campanulate flower, with long, slender, pale yellow tails, or points to the sepals, these are creamy-white, blotched towards the base on the outside with purple, the inside also similarly marked.—*Frontino, New Grenada*.

FIG.—*Gard. Chron.*, N.S., 1883, xx. p. 181, f. 30; *Bot. Mag.*, t. 7125; *Woolward's Masd.*, iii. t. 21.

M. CASSIOPE, *Hort.*—One of the most curious hybrids in this genus, was raised by Captain Hincks, of Breckenbrough, Thirsk; it is the result of a cross between *M. triangularis* and *M. Harryana*. "The shape is that of an enlarged and improved *M. triangularis*, with the reflexed dorsal sepal of *M. Harryana*, but scarcely modified in other respects. The colours are charming, but not easily described in few words. Viewed not too closely, the flower seems to be a shade between pink and Indian yellow, with the three nerves of each sepal reddish-purple. But when examined closely, and especially through a lens, it is seen to be densely studded everywhere with minute reddish-purple dots on a pale, almost yellowish, ground" (J. O'Brien, in *Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 749).—*Garden hybrid*.

M. CAUDATA-ESTRADEAE, *Rolfe*.—A cross obtained by Mr. Seden between *M. Estradae* and *M. Shuttleworthii*, and described by Mr. Rolfe as follows:—"In size and shape of flowers it closely resembles *M. caudata*, though the sepals are not quite so deeply connate, a character in which it shows a slight approach to *M. Estradae*; the colour is very beautiful; the upper sepal a nearly uniform

rose-purple, the lateral sepals rosy-purple at base, shading off into bright lilac-purple above; tails deep dull yellow; petals white; lip and face of column white, with numerous minute lilac spots; apex of column maroon-purple, also a minute spot of same colour at apex of lip" (*Gardeners' Chronicle*, 3rd ser., 1889, v. p. 714).

M. CHELSONI, *Rchb. f.*—This was, we believe, the first hybrid *Masdevallia* that has been raised in this country; it is said to be a cross between *M. Veitchiana* and *M. amabilis*. The flowers resemble those of *M. Veitchiana* in form, but are considerably smaller and duller in colour; the segments of the perianth are orange, the lower ones being covered by a large number of small excrescences of a bright mauve colour; these take the form of two broad stripes, and give the surface a somewhat hairy appearance. We saw a fine plant of this in the possession of W. Lee, Esq., Downside, Leatherhead, who had a grand collection of these gems. It blossoms in September and October.—*Garden hybrid*.

M. CHESTERTONI, *Rchb. f.*—A curious and interesting species, collected by the late Mr. Chesterton. It is described as follows:—"Sepals strictly ovate, having abrupt tails of equal length, covered and bordered with very small, very numerous, acute black warts, greenish sulphur-coloured, with black tails, black border, and numerous black spots; lips transversely reniform, with two trapezoid low valves on the stalk, covered with radiating keeled veins, ochre and reddish; column arched, ochre, with a few brownish-red spots" (*Gardeners' Chronicle*, n.s., 1883, xix. p. 532). Flowers in July.—*Antioquia, U. S. of Colombia*.

FIG.—*Bot. Mag.*, t. 6377; *Woolward's Musc.*, i. t. 3.

M. CHIMAERA, *Rchb. f.*—Great are the beauties of this truly wonderful Orchid. The plants that were first distributed for it have proved to be quite a distinct thing, now known as *M. nycterina*. It is of tufted growth, as are most of the species, the leaves being 6 to 9 inches high, cuneate oblong acute, narrowed to and sheathing at the base; the scapes bear each a solitary much expanded flower, of which the three sepals are but slightly connate at the base, triangular, with the ends drawn out into long slender tails, which are of great length, as a glance at our illustration will show, pale ochraceous yellow, with numerous purple-violet spots, the margin densely fimbriate, and the whole inner surface hispid, the tails of a deep violet-purple colour; the petals are cuneate oblong, slit at their apex into four wings containing in their centre a cuneate warty body; the lip is slipper-shaped with the edges denticulate. This species, with its allies that have drooping flowers, should be grown in baskets suspended from the roof of the house.—*New Grenadu*.

FIG.—*Xenia Orch.*, ii. t. 185; *Id.*, t. 186, f. 1; *Florist and Pomol.*, 1873, p. 2, with fig.; *Puydt, Les Orch.*, t. 23; *Revue Hort. Belge*, 1885, p. 97 (plate); *Orchid Album*, v. t. 203; *Reichenbachia*, i. t. 19; *Veitch's Man. Orch. Pl.*, v. p. 27; *Gartenflora*, 1889, t. 1311.

M. CHIMAERA BACKHOUSIANA, *Rchb. f.*—This plant is very closely allied to *M. Chimaera*, and we agree with those who consider it to be a variety of that species. Reichenbach says it is coloured like the well-known *M. Wallisii*

(the usual *Chimaera* of gardens), but the colours are much brighter, and the flowers much larger, having also a very long narrow lip. A form of this plant has been flowered by Messrs. Backhouse & Son, measuring 16 inches across the blossom.—*New Grenada*.

M. CIVILIS, *Rehb. f.*—This is a species seldom seen. It was brought to this country, we believe, for the first time in 1862, and was flowered for the first time in 1864. It is not a very showy plant although exceedingly interesting, but it emits a very offensive odour, which, however, is only perceptible on close contact. The stems are densely clustered, each bearing a single fleshy leaf, which is narrow, oblong, some 5 or 6 inches long, deep green, and persistent; scape short, bearing a solitary cylindrical flower; the tips of the sepals furnished with short greenish-yellow tails, which are stiff and recurved; the sepals yellowish-green on the inside, stained with deep purple at the base, above which they are freely dotted with purple; lip long and narrow, freckled all over with purple dots. Flowers in the spring and summer months.—*Peru*.

FIG.—*Bot. Mag.*, t. 5176.

M. COCCINEA, *Linden.*—A charming little plant of compact growth, with tufts of leathery oblong-obtuse dark-green three-nerved leaves, the stalk-like base somewhat terete and channelled; the peduncles are 1 foot high, and the flowers solitary, the perianth with a short curved tube, which with the upper linear-subulate sepal is rosy-pink, the elliptic falcate lower sepals of a glowing scarlet. Dr. Lindley described it as "a most charming thing with flowers as red as a soldier's coat." This little gem has often been sent to this country, but the plants have either been dead on arrival, or have soon died through being subjected to too great heat, and other bad treatment. We have however now found out the proper method of growing them, though it is still a rare species. A variety of *M. ignea* is often sold for this plant, but it is totally distinct from that species, the foliage being much stouter and shorter, and the flowers larger.—*New Grenada: Pamplona*.

FIG.—*Gard. Chron.*, 1868, p. 75, with fig.; *Id.*, N.S., xvi. p. 236, f. 49; *Xenia Orch.*, i. t. 74, ff. 1-2; *Gartenflora*, t. 870; *Floral Mag.*, 2nd ser., t. 410, f. 2; *Woolward's Masd.*, iii. t. 24.

M. COLIBRI.—See *M. EPHIPPIMUM*.

M. CORIACEA, *Lindl.*—This old species was discovered by Hartweg in 1845 in the Eastern Cordilleras of New Grenada at an altitude of 9,000 feet. Leaves linear-lanceolate, 5 to 6 inches long, somewhat fleshy, green, spotted with purple on the lower part; sepals greenish-yellow, irregularly spotted on the longitudinal veins; petals whitish, with a median purple stripe.—*U. S. of Colombia*.

FIG.—*Lindenia*, vii. t. 295; *Woolward's Masd.*, iii. t. 25.

M. CORNICULATA, *Rehb. f.*—Flowers about the size of *M. coriacea*, dark purple.—*U. S. of Colombia*.

FIG.—*Woolward's Masd.*, ii. t. 12.

M. COSTARICENSIS, *Rolfe*.—A pretty species, which was first flowered by Sidney Courtauld, Esq., of Bocking Place, Braintree, who has one of the most complete collections of these interesting plants. It is closely allied to *M. Reichenbachiana*, but differs in having white flowers with yellow tails; the nerves of the lateral sepals are also yellow.—*Costa Rica*.

M. COURTAULDIANA, *Rchb. f.*—A pretty hybrid, dedicated to Sidney Courtauld, Esq., of Braintree. It was obtained by N. C. Cookson, Esq., by crossing *M. rosea* with *M. Shuttleworthii*, and is described as follows:—"The secondary axis is more than $\frac{1}{2}$ inch in length, and bears a well-stalked, cuneate, oblong, blunt, acute, very strong leaf, which is $3\frac{1}{2}$ inches in length, the breadth is nearly 1 inch; the peduncle is longer, and bears a fine flower of delicate colours, whose shape may be compared with that of *M. Reichenbachiana*, though the free triangular parts are larger; it has a long wide tube, broad triangular parts, which are nearly equal to the tails; the upper part of the tube, as well as the triangular part of the upper sepal and its tail, are light brownish copper red, the three principal nerves being keeled and brown outside; the opposite part of the tube and the equally-tailed triangles are of a very fine light rose colour; the petals, lip, and column are very small and white, the lip and column has a darker tint; petals ligulate, blunt, with an apiculus at the tip, and with a descending square foot inside; lip pandurate, recurved at the apex with a blunt apiculus and a channel in the middle, white, with Indian purple spots and an Indian purple apex; column white, clavate, with a denticulate border to the androclinium, there are some Indian purple spots on it; upper part of the anthers Indian purple; on the inside of the base of the tube where the mentum is scarcely developed, there is an oblong white area with numerous small purple or blood-coloured spots. The flower is equal to that of a good *M. rosea*, yet the general shape with the broad free triangles is nearer those of *M. Shuttleworthii*" (*Gardeners' Chronicle*, 3rd ser., 1889, v. p. 200).—*Garden hybrid*.

M. DAVISII, *Rchb. f.*—A very distinct species, with narrow linear-lanceolate, keeled, thick, coriaceous leaves 8 inches long, and taller scapes supporting one horizontal orange-yellow flower, which has a sub-cylindrical tube and shortly caudate sepals, of which the upper one is smaller ovate, contracted into a slender erect tail 1 inch long, and the lateral ones are $2\frac{1}{2}$ inches long, nearly parallel, ending in a short tail $\frac{1}{4}$ inch long, the limb oblong; the small lip is linear-oblong, obtuse and three-keeled. A very valuable addition to this class of plants, its distinct colour forming a lively contrast with those of other popular kinds.—*Peru*.

FIG.—*Bot. Mag.*, t. 6190; *Xenia Orch.*, iii. t. 203; *Orchid Album*, ii. t. 76; *L'Orchidophile*, 1883, p. 574 (plate); *Woolward's Masd.*, iii. t. 26; *Vitch's Man. Orch. Pl.*, v. p. 39.

M. DAYANA, *Rchb. f.*—In growth this plant closely resembles a *Restrepia*. The leaves measure 4 inches in length by 2 to 3 inches broad and are very stout; the sepals, which are united at the tips, are yellow irregularly spotted with reddish-purple; the interior portions of the flower are only visible through the openings at the side of the petals, which gives the flowers a curious effect.

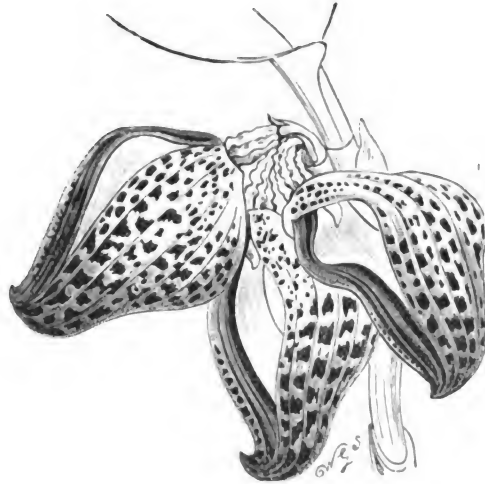
Named in honour of the late J. Day, Esq., of Tottenham, and first flowered by him in 1875.—*U. S. of Colombia*.

FIG.—*Gard. Chron.*, N.S., 1886, xxvi. p. 428, f. 86.

SYN.—*Restrepia Dayana*; *Cryptophoranthus Dayanum*.

M. DENISONI.—See **M. HARRYANA DENISONIANA**.

M. ELEPHANTICEPS, *Rehb. f. et Warsc.*—A species of bold and striking character, having tufts of acute, cuneate-spathulate leathery leaves 8 or 9 inches long, and stout peduncles a foot high, each bearing a solitary horizontal flower 3 to 4 inches long of peculiar form, and which has been compared to an elephant's head. The tubular portion of the perianth is produced into a chin at the lower base, and with the lower sepals is of a dark rich crimson-purple, pale purple on the outer side, united for about one-third of their length, the tail lobe continuations yellow on the inner surface, and gently curving upwards; the upper sepal, which stands nearly parallel to the lower one, is bright yellow both inside and out, separated much lower down, the three-cornered basal part gradually narrowing into the yellow tail, which has a slight upward curve; the small lip is obtusely rhomboid, its front half densely papillose. The variety named *pachysepala* has the tails of the sepals broader.—*New Grenada*.



MASDEVALLIA DAYANA.

(From the *Gardeners' Chronicle*.)

FIG.—*Xenia Orch.*, i. t. 3; *Id.*, t. 74, ff. 3, 4 (*pachysepala*); *Flore des Serres*, t. 997.

M. ELLISIANA, *Rolfe*.—A cross raised by Mr. Seden between *M. Harryana* and *M. ignea*. It was exhibited at the meeting of the Royal Horticultural Society on June 25th, 1899, when it was awarded a first-class certificate. "The name was given in compliment to Lady Howard de Walden, of the Mote Park, Maidstone, a great lover of Orchids, Ellis being the family name. In shape the flowers much resemble *M. ignea*, the colour light carmine, with darker nerves; the upper sepal is small, broadly triangular, light purple, with three darker nerves; the tails of the lateral sepals are very short; the base of the tube yellow; the petals are white, with faint purple mid-line; the lip white; the column with violet angles. It is a pretty plant, and tolerably intermediate in character between its two parents" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1899, vi. p. 154).—*Garden hybrid*.

M. EPHIPIUM, *Rehb. f.*—A very curious species of robust and striking character, forming a dense tuft of spathulate-oblong three-nerved leaves a span long, and winged ancipitous or triquetrous peduncles upwards of a foot high,

bearing each a large flower, 4 inches long, with the dorsal sepal small, yellow, roundish, ending in a long reflexed yellow tail, and the two lateral sepals reddish or chestnut-brown, broad and cymbiform at the base, each abruptly attenuated into a long yellow tail; thus there is a purplish-brown pouch-like base, with a few paler streaks, and three divergent orange-yellow tails from 3 to 4 inches long. On the inside of the lateral sepals are five corrugated ribs, which meet at the apex and form corresponding ridges on the outer surface. The colours of the flowers are said to have a bluish metallic lustre, like the plumage of some of the humming birds. This plant is extremely rare.—*New Grenada: Antioquia.*

FIG.—*Xenia Orch.*, ii. t. 195; *Bot. Mag.*, t. 6208; *L'ill Hort.*, 3rd ser., t. 180; *Floral Mag.*, 2nd ser., t. 443; *Veitch's Man. Orch. Pl.*, v. p. 41; *Woolward's Masd.*, i. t. 4.

SYN.—*M. Trochilus*; *M. Colibri.*

M. ESTRADAE, *Rehb. f.*—A little gem of profuse-blooming habit. Its densely-tufted leaves are elliptic oblong or spatulate, obtuse or bi-fid, coriaceous in texture, deep green, about 4 inches long including the petioles. The scapes are erect, slender, single-flowered; the sepals are combined at the base into a short campanulate tube, with a spreading limb, nearly equal in size, the dorsal one oblong boat-shaped, half an inch long, yellow in the lower and violet-purple in the upper half, suddenly contracted into a yellow filiform tail an inch long; the lateral sepals are similar, but flatter, violet-purple below and whitish above, each ending in a filiform tail. The general effect of the plant is very pleasing. This species was first observed in the garden of Dona Estrada, a



MASDEVALLIA ESTRADAE.

lady of New Grenada, who is described as a skilful grower of Orchids; it was first introduced by us in 1873.—*New Grenada.*

FIG.—*Bot. Mag.*, t. 6171; *Revue Hort. Belge*, 1887, p. 133 (plate); *Woolward's Masd.*, iii. t. 27.

M. FALCATA, *O'Brien.*—This is a hybrid between *M. Lindenii* and *M. Veitchiana*, and was raised by D. O. Drewitt, Esq., of Riding Mill-on-Tyne, the result being a flower "equal in general appearance to the best form of *M. Chelsoni*, and it is as showy as some of the forms of *M. Veitchiana*." The colour of the flowers is yellow "studded closely with minute purplish-crimson papillae, the colour deepening as the tails are approached to a deep bright red."—*Garden hybrid.*

M. FENESTRATA, *Lindl.*—A curious little species, the flowers of which are always objects of great attention. It is one that we have found to thrive best in the temperature of the intermediate house. A tufted plant seldom exceeding 6 inches in height, leaves broadly oblong, deep-green, persistent, flowers produced singly from the base of the leaf, about an inch long, and of a deep-brown hue; sepals joined throughout their length, saving a window-like opening on either side. Flowers in the spring and summer months.—*West Indies*.

FIG.—*Bot. Mag.*, t. 4164.

SYN.—*Pleurothallis atropurpurea*; *Specklinia atropurpurea*; *Cryptophoranthus atropurpureum*.

M. FRASERII, *Rchb. f.*—A cross between *M. ignea* and *M. Lindenii*, the flowers very much resembling those of its first-named parent, but the tail of the dorsal sepal is not bent down as in that species, the colour is rich bright crimson, tinged with orange.—*Garden hybrid*.

M. FULVESCENS, *Rolfe*.—Introduced from New Grenada by Messrs. Horsman & Co. It is a very pretty species, according to Mr. Rolfe apparently allied to *M. infracta*, but with more brightly-coloured flowers. "The perianth is of a buff shade, passing into light purple-brown on the constricted sides of the throat, the upper sepal deeper orange-yellow, shading into purple-brown on the two lateral nerves" (R. A. Rolfe, in *Gardeners' Chronicle*).—*U. S. of Colombia*.

FIG.—*Gard. Chron.*, 3rd ser., 1890, viii. p. 325, f. 65.

M. GAIRIANA, *Rchb. f.*—An interesting hybrid between *M. Davisii* and *M. Veitchiana*, the result being the production of an intermediate form. The colour of the flower is that of *M. Davisii*, but the form is more like *M. Veitchiana*, and it is furnished with the bluish-purple areas which are found on the flowers of that species. It was raised in Messrs. Veitch & Sons' nursery at Chelsea.—*Garden hybrid*.

M. GASKELLIANA, *Rchb. f.*—"The lanceolate, acute, narrow, somewhat thin leaves scarcely exceed 4 inches in length; the peduncles would appear to remain one-flowered; the outer surface of the sepaline cup is purple-mauve, with two yellow areas on the inferior base and apex of the lateral sepals; tails longer, mauve-purple on both sides; inside the cup is light yellowish, hairy, full of mauve spots; petals purple-mauve, bivalved in the usual manner at top, and these with acute asperities; lip calceolar, narrow, long (as in *M. Backhousiana*), with one chief longitudinal keel, and one on each side, light yellow; column, light yellow with a very long beak. It stands nearest to *M. radiosa*" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1883, xx. p. 294). It was flowered by Holbrook Gaskell, Esq., of Liverpool.—*Native country not stated*.

M. GELENIANA, *Rchb. f.*—This hybrid *Masdevallia* is a cross between *M. Shuttleworthii* and *M. xanthina*, and was raised by Messrs. Sander & Co., and dedicated to Baron Hruby von Gelenye, of Peckau, Bohemia. The plant is intermediate between its two parents, the flowers are pale greenish-yellow,

minutely spotted with rosy-crimson. It was flowered and exhibited before the Royal Horticultural Society on April 25th, 1893, by Sir Trevor Lawrence, Bart.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1893, xxvii. p. 119, f. 18.



MASDEVALLIA GELEANIANA.

(From the *Journal of Horticulture*.)

M. GLAPHYRANTHA, *Rehb. f.*—Another of Mr. Seden's hybrids; it is between *M. infracta* and *M. Barlaeana*; this latter being a Peruvian species, closely allied to *M. amabilis*. The sepals are rosy-purple with yellow tails, the upper one yellowish in the middle.—*Garden hybrid*.

M. GUTTULATA, *Rolfe*.—According to Mr. Rolfe this is an interesting little *Masdevallia*; flowered by Mr. F. W. Moore, of Glasnevin Botanic Gardens, on several occasions. "It belongs to the *Torarensis* group. The flowers are about half the size of that species, yellowish-white in colour, spotted and slightly suffused with light purple. Flowers in March.—*Native country not stated*.

M. HARRYANA, *Rehb. f.*—A free-growing and very handsome species, which in its habit of growth resembles *M. Lindenii*, of which it is sometimes regarded as a variety, differing in its colouring. It forms thick tufts of long-stalked narrowly obovate-spathulate leathery leaves, 8 or 10 inches long, and flowers of the richest blood-crimson, on scapes somewhat taller than the leaves. It is one of the handsomest and most distinct species of this genus. The flowers are 3 inches long; the sepals connate below into a decurved sub-cylindrical tube,

which is yellow, as is the throat; the dorsal sepal crimson, filiform from a small triangular base, 2 inches long, the lateral ones nearly an inch wide, and about 2 inches long, flat, semi-ovate, attenuate but not caudate at the apex, all of the richest blood-red suffused with magenta. There are many varieties, varying in colour, in shape, and in the size of the flowers.—*New Grenada*.

FIG.—*Florist and Pom.*, 1873, p. 169, with tab.; *Belg. Hort.*, 1873, t. 21; *L'Ill. Hort.*, 3rd ser., t. 142; *Bot. Mag.*, t. 5990 (as *Lindenii*); *Flore des Serres*, t. 2250; *Floral Mag.*, t. 555 (tube green); *Id.*, 2nd ser., t. 410, f. 3; *Veitch's Man. Orch. Pl.*, v. p. 35; *L'Orchidophile*, 1890, p. 80 (plate).

M. HARRYANA ALBA MACULATA, *Hort. Warner*.—Flowers white, tipped with bright rose faintly spotted towards the apex of each sepal, and having four short rosy-purple stripes near the entrance to the throat.

M. HARRYANA ARMENIACA, *Williams*.—A most distinct variety, with large rounded flowers, 2 inches across, of a deep apricot colour, resembling some of the varieties of *Azalea mollis*, the eye being of a rich yellow. It was flowered by R. H. Measures, Esq., Woodlands, Streatham.—*New Grenada*.

FIG.—*Orchid Album*, v. t. 224.

M. HARRYANA ATRO-SANGUINEA, *Williams*.—This variety is the darkest form of *M. Harryana* we have yet met with, having richly coloured handsome flowers of large size, the lateral sepals being nearly 1 inch wide, of a rich glowing crimson flushed with magenta; the points of the lateral sepals are falcate-lanceolate, so that they turn inwards, and nearly meet at the point.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 105.

M. HARRYANA CARNEA, *L. Linden*.—The flowers in this variety are pale-rose, flesh-colour, the veins and tips bright red.

FIG.—*Lindenia*, viii. t. 332, f. 3.

M. HARRYANA COERULESCENS, *Hort*.—The flowers of this variety are very large and of fine substance, the two lower sepals having together almost a circular outline, and measuring across the centre $2\frac{1}{2}$ inches; these lateral sepals are broadly semi-ovate and apiculate, and of a rich magenta-crimson, flushed with bluish-purple.—*New Grenada*.

FIG.—*Orchid Album*, i. t. 24.

M. HARRYANA DECORA, *Williams*.—A beautiful variety with light rosy-purple flowers, faintly striped with a deeper purple, and having the extreme tips of the sepals crimson. Flowers in April and May.—*New Grenada*.

FIG.—*Orchid Album*, viii. t. 344.

M. HARRYANA DENISONIANA, *Hort*.—This is undoubtedly one of the largest and richest-coloured forms of the group of varieties to which the name of *M. Harryana* is applied. The lateral sepals are very broad and have each a short acute subulate point, which is turned inwards almost horizontally; the colour is the deepest blood-crimson flushed with magenta. This plant is often found in collections under the name of the Bull's-blood variety of *M. Harryana*,

but after making many comparisons between the two we have always found them to be the same. It is certainly one of the most distinct varieties of this beautiful species, and should be found in every collection.—*New Grenada*.

FIG.—*Floral Mag.*, 2nd ser., t. 79.

SYN.—*M. Denisoni*.

M. HARRYANA GRANDIFLORA, *Williams*.—This is the largest form of *M. Harryana* we have seen. It has a fine and well-rounded form with flowers of a bright magenta-crimson, about 3 inches long by $2\frac{3}{4}$ inches broad, and having the tips of the lateral sepals turned inwards in a horizontal fashion.—*New Grenada*.

M. HARRYANA GRAVESIAE, *Hort.*—An unexpected novelty and great beauty, which originated in the collection of Henry Graves, Esq., Orange, New Jersey, U.S.A. It is said to be a pure white form, and as far as we are aware the first time it has occurred. This variety will be a much looked-for desideratum amongst lovers of this popular genus.

FIG.—*Gard. Chron.*, 3rd ser., 1892, xii. p. 131, f. 21.

M. HARRYANA LAETA, *Rehb. f.*—A very distinct and beautiful variety, having large bright rosy-purple flowers. It is very peculiar in shape, being much narrowed at the upper part of the flower, and having the margin slightly undulated. This variety is more distinctly striped than are many of the forms.—*New Grenada*.

M. HARRYANA LILACINA, *Williams*.—A very delicate-coloured and beautiful form, having broad almost circular flowers of a bright rosy lilac colour, which is quite distinct from that of any other variety known to us.—*New Grenada*.

FIG.—*Lindenia*, viii. t. 382, f. 2.

M. HARRYANA MACULATA, *Hort. Warner*.—A very distinct and beautiful variety, in which the flowers are oval, large, measuring $2\frac{1}{4}$ by 2 inches, pale rosy-purple, densely spotted with deep magenta-purple. It originated in the collection of R. Warner, Esq., of Chelmsford.

M. HARRYANA MINIATA, *Williams et Moore*.—Although *M. Harryana* varies as much as any Orchid we know of, we had no suspicion or hope that a scarlet-flowered variety would ever present itself. Great was our surprise, therefore, when visiting the collection of W. Lee, Esq., Downside, Leatherhead, in the summer of 1883, to find a beautiful vermilion-coloured form of this plant. We subsequently met with the same variety in the collection of R. Warner, Esq., Chelmsford. In this form the flowers are of the full average size, the lateral sepals being fully 2 inches long and 1 inch wide, of a bright vermilion-red, flushed with scarlet, the principal ribs being marked out with rich crimson lines, and the yellow eye being very distinct. It is a bright-looking and attractive variety of surpassing beauty.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 110.

M. HARRYANA ROSEA, *Hort. Warner*.—In this variety the flowers are of a delicate rose colour, $2\frac{1}{2}$ by 2 inches.

M. HARRYANA SANGUINEA, *Hort.*—A distinct and handsome form, having large brilliantly coloured flowers of a reddish crimson, flushed with orange.—*New Grenada*.

M. HARRYANA SPLENDENS, *Hort.*—A very high coloured and beautiful variety, having broad finely-shaped flowers of an intense mauve-magenta, the veins being distinctly marked with rich crimson.—*New Grenada*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 26.

M. HARRYANA VERSICOLOR, *Moore*.—This is the most distinctly marked variety we have yet met with. The flowers are large, almost circular, and enlivened by a deep yellow eye; the lateral sepals have a ground colour of bright magenta, variously marked with rich maroon-crimson; in some instances the markings take the form of a conspicuous band on each of the outer margins, in other cases they consist of blotches of irregular outline variously distributed on the surface. This fine variety was first noted among the choice Orchids cultivated in the ducal gardens at Trentham, and we have also seen it in the grand collection of Sir Trevor Lawrence, Bart., Burford Lodge, Dorking.—*New Grenada*.

M. HIEROGLYPHICA, *Rehb. f.*—A charming species, first flowered by W. Lee, Esq., late of Leatherhead. It is described as follows:—"It is lovely, much like *M. Arminii*, but quite distinct in its long tails and in the shape of its sepals, which are much less rounded, and more triangular; the tails are mauve on the upper half, the lower part being orange-coloured; bodies of sepals light mauve, purple outside, white at the base; the dorsal sepal has three Indian-purple lines, and four manifold rows of small spots of same colour; all the remainder of the inside of the sepals is purple; there is, however, an Indian-purple line on the mid-nerves of the lateral sepals; petals whitish-sulphur; lip with innumerable small purple spots on the disk, purple at the base, darker purple in front" (*Gardeners' Chronicle*, n.s., 1885, xxiv. p. 534). Blooms in June.—*U. S. of Colombia*.

M. HINCKSIANA, *Rehb. f.*—Another hybrid, raised by Capt. Hincks, of Breckenbrough, Thirsk, between *M. tovarensis* and *M. ignea*. "The foliage is just intermediate between the two parents, having 'a longer footstalk than *tovarensis*, and not quite so long a one as that of *ignea*.' The flower is very graceful on its slender peduncle, the first one being one-flowered, but the parentage of *tovarensis* might give hopes for more flowers. It has a slender short white tube, a very short triangular median sepal, light ochre, running out in a declined ochre tail, orange at top; the pair sepals are quite those of *M. tovarensis*, but narrower, light ochre, the short tails orange; petals ligulate, emarginate at the top, obtuse-angled over the base, with a keel running inside quite as in *ignea*; lip ligulate acute, with two little short semi-oblong keels in the middle in lieu of the longer ones of *M. tovarensis*" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, ii. p. 214).—*Garden hybrid*.

M. HOUTTEANA, *Rehb. f.*—A distinct and free-flowering species of a very pleasing character. It forms dense tufts of linear-lanceolate acute leaves, which are from 10 to 12 inches in length by about $\frac{1}{4}$ inch in breadth, thin in

texture, carinate below, and of a light green colour; the scape is about half the length of the leaves, single flowered; the flowers about 1 inch across, with broad semi-ovate, triangular spreading sepals of a creamy white profusely spotted with blood-red, the point of each sepal being extended into a terete tail-like point of the same blood-red colour as the spots, and measuring from 2 to 3 inches in length. It has been exhibited under the name of *M. amabilis*.—Venezuela, elevation 8,000 feet.

FIG.—*Flore des Serres*, t. 2106.

M. IGNEA, *Rchb. f.*—A very handsome and distinct species, with tufts of elliptic obtuse leathery long-stalked leaves, about 6 inches high, and taller graceful scapes, bearing large horizontal decurved flowers, fully 2 inches long, with a curved sub-cylindrical tube, the dorsal sepal subulate from a broadish base, deflexed between the elliptic-oblong lateral ones, the colour a bright cinnabar red inside, the three nerves on each sepal marked by deeper crimson lines. There are several varieties of this species, varying in size and in the colour of their flowers. This plant when well grown forms a most beautiful object, the colour being so distinct. We saw a splendid specimen of it, bearing over forty flowers, in Baron Schröder's collection at Staines in the month of January, 1884.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5962; *Florist and Pom.*, 1873, p. 169, with tab.; *L'Ill. Hort.*, 3rd ser., t. 333; *Gard. Chron.*, 1872, p. 545, f. 140; *Id.*, n.s., xvi. p. 305, f. 57; *Orchid Album*, ii. t. 62; *Floral Mag.*, 2nd ser., t. 15; *Lindenia*, v. t. 210; *Veitch's Man. Orch. Pl.*, v. p. 47.

M. IGNEA AURANTIACA, *Williams*.—A distinct variety, having bright orange-coloured flowers veined with vermilion. This forms a nice companion to the other forms of the type, being unique in colour.—*New Grenada*.

M. IGNEA BODDAERTII.—See *M. BODDAERTII*.

M. IGNEA GRANDIFLORA, *Williams*.—A very large and handsome variety having circular flowers of great substance; the lateral sepals are bright vermilion lined with crimson and suffused with purple.—*New Grenada*.

M. IGNEA MASSANGEANA, *Williams*.—A large-flowered and distinct kind, having bright orange-vermilion coloured flowers, flushed with rosy purple. This variety was named in honour of M. D. Massange, Château de Baillonville, Marche, Belgium.—*New Grenada*.

FIG.—*Orchid Album*, vi. t. 273.

M. INAEQUALIS, *Rchb. f.*—This, although one of the smaller-flowered species, is nevertheless extremely pretty. It is allied to *M. triangularis*, and like that has thin-textured flowers. The leaves are of the usual character; the flowers have a somewhat cup-shaped tube, and well-expanded sepals, ornamented with three slender tails upwards of an inch in length, the ground colour being yellowish-white prettily spotted with purple. It is a desirable species for basket culture.—*New Grenada*.

M. INFRACTA, *Lindl.*—Although not a very showy species, it is a very pretty one, and could not be omitted from this enumeration. It was found upwards of fifty years since on the Organ Mountains in Brazil, and more

recently in Peru. Leaves oblong-lanceolate, having a short petiole at the base, carinate beneath, leathery in texture, 3 to 6 inches long, bright shining green, persistent; scape erect, slender, one-flowered, flowers campanulate, furnished with long spreading yellowish-green tails, inside of sepals reddish-violet or rosy-purple, upper sepal yellowish-white. Flowers in the winter months.—*Brazil; Peru.*

FIG.—*Flore des Serres*, xxiii. t. 2389; *Woolward's Masd.*, ii. t. 14.

SYN.—*M. longicaudata*.

M. IONOCARIS, *Rehb. f.*—This is another of the small species, but it is very elegant. The whole plant is less than 6 inches high, notwithstanding, it is hardy enough to exist at 10,000 feet elevation in the Andes of Peru. The stems are densely tufted, and the lanceolate leaves narrowed below into a petiole, leathery, persistent, and deep green; scape erect, about 3 inches long, bearing a single campanulate flower, which is about $\frac{1}{2}$ inch across, tailed, white, stained with violet-purple at the base, tails yellow. Blooms in the autumn months.—*Peru.*

FIG.—*Bot. Mag.*, t. 6262; *L'Orchidophile*, 1883, p. 667 (plate).

M. LEONTOGLOSSA, *Rehb. f.*

—This is a curious species, which we have seen but once, and that was in the collection of Sir Trevor Lawrence, Bart., at Burford Lodge, Dorking. Stems tufted, bearing oblong-lanceolate leaves, which are about 6 inches long, leathery in texture, deep green and persistent; scape short, one-flowered, sepals lengthened out into tail-like points, yellowish-green, heavily spotted and blotched with deep purple; petals small, white; lip protruding, tongue-like, purple. Blooms in the winter months.—*Venezuela.*

FIG.—*Bot. Mag.*, t. 7245; *Vitch's Man. Orch. Pl.*, v. p. 49; *Woolward's Masd.*, ii. t. 15.

M. LINDENI, *André*.—A very handsome and brilliant species, evidently closely related to *M.*

Harryana, as some of the varieties run so near to that species to be scarcely distinguishable therefrom. Like its allies it has tufts of oblong-lanceolate obtuse or emarginate leaves, tapered below, and solitary flowers on scapes taller than the leaves, of a rich magenta-purple, the short curved tube and throat being white. The flowers of this species are not so large as those of



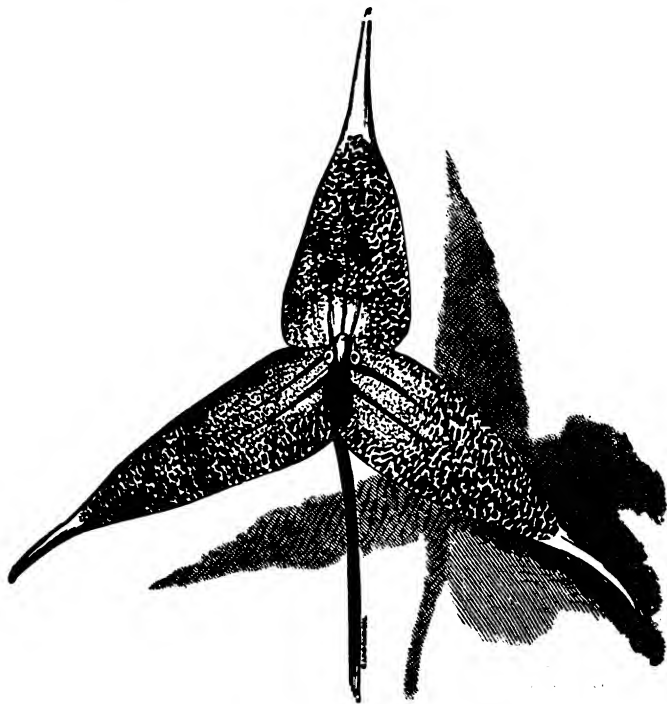
MASDEVALLIA LINDENI.
(From the *Gardeners' Chronicle*.)

some forms of the allied *M. Harryana*, but their distinct and brilliant colour renders the plant a very conspicuous object in a collection or group. The plant figured under this name in the *Botanical Magazine* is *M. Harryana*. Flowers produced in spring.—*New Grenada*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 42; *Jennings, Orch.*, t. 17; *Floral Mag.*, 2nd ser. t. 28; *Id.*, t. 410, f. 1; *Gard. Chron.*, N.S., i. p. 385, f. 85; *Id.*, xvi. p. 336, f. 62; *Floria and Pom.*, 1873, p. 169, with tab.; *Revue Hort. Belg.*, 1883, p. 25 (plate).

M. LONGICAUDATA.—See *M. INFRACTA*.

M. LOWII, *Hort.*—This belongs to the *Chimaera* section, and was introduced by Messrs. Hugh Low & Co. "The two most prominent features of *M. Lowii* are the almost equal elongated triangular sepals, and the small peculiar, nearly flat, dark purple labellum; the sepals form the showy part of the flowers and

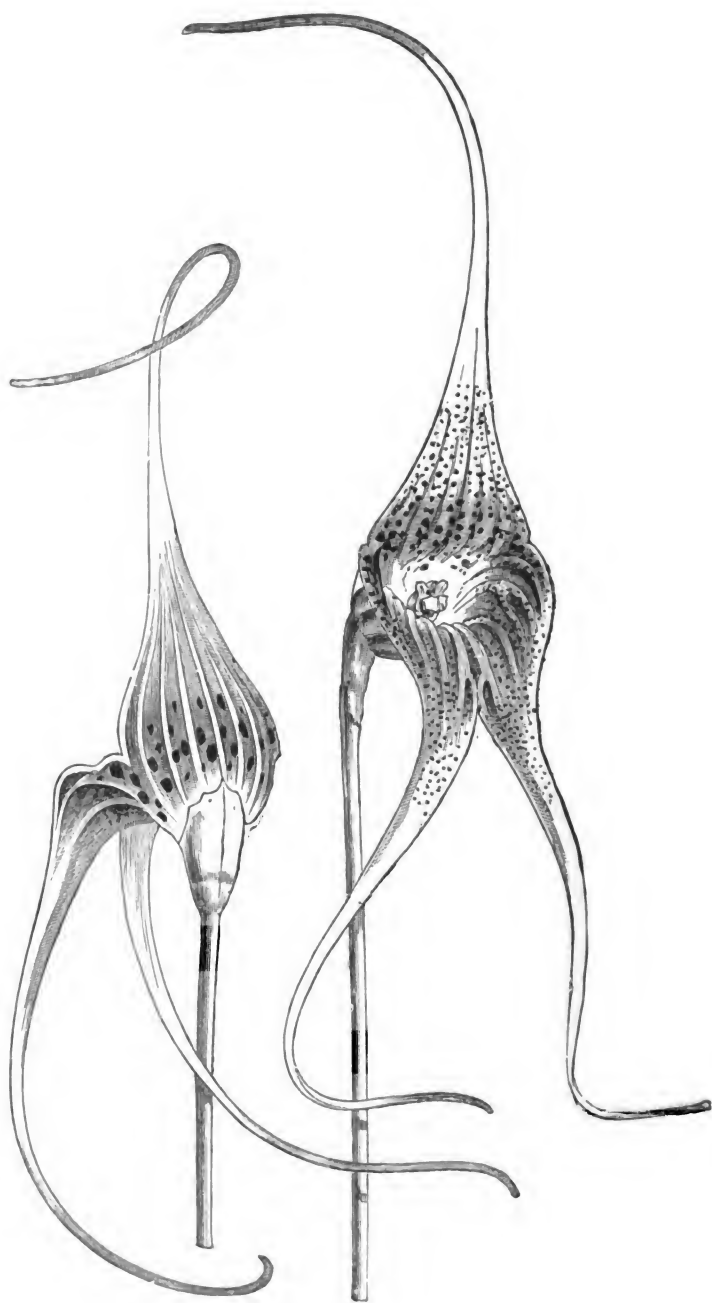


MASDEVALLIA LOWII.
(From the *Gardeners' Chronicle*.)

are almost white, profusely spotted and marked with reddish-purple. When the plant is suspended in a basket the flowers on the curved stalks look very elegant."—*Cauca, U. S. of Colombia*.

FIG.—*Gard. Chron.*, 3rd ser., 1890, viii. p. 268, f. 44.

M. MACROCHILA, *Regel.*—A beautiful species, collected in New Grenada for Messrs. Sander & Co., and at first sent out by them as *M. Schlimii*, but on



MASDEVALLIA MACRURA.
(From the *Gardeners' Chronicle*.)

flowering it proved to be distinct, being more allied to *M. bella*. The flowers measure $1\frac{1}{2}$ inch from tip to tip of the sepals, which are ovate, bright green, minutely spotted with black; the apices are abruptly terminated by a thread-like tail as long as the sepals themselves; lip broadly sub-panduriform, bright orange-yellow, veined with dark orange.—*New Grenada*.

FIG.—*Gartenflora*, 1891, t. 1344, ff. 4—6.

M. MACRURA, *Rehb. f.*—A very rare and stately-growing species, producing tufts of unusually large stout coriaceous bluntly oblong glossy leaves, from 2 to 3 inches in breadth, the scapes bearing solitary flowers, which have a broad short perianth divided into an upper and lower lip; the former corresponding with the dorsal sepal has a triangular base extending into a stout tail, while the lower lip formed of the lateral sepals is somewhat larger, but parted so as to form two tails; the broader parts of the sepals are light reddish-brown, marked with dark purple-brown streaks and spots, the tails, which are from 4 to 6 inches in length, being yellow; the principal nerves of the interior of the flowers are quite prominent, and covered with numerous blunt warts. Flowers produced in winter.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., vii. p. 12, f. 2; *Id.*, xvi. p. 336, f. 65; *Lindenia*, iii. t. 113; *Woolward's Masd.* i. t. 5; *Bot. Mag.*, t. 7164; *Orchid Album*, ix. t. 431.

M. MACULATA, *Klotzsch et Karst.*—A remarkable species of this very remarkable genus, of stoutish habit, producing tufts of oblong spatulate leaves, narrowed to the base, and solitary horizontal flowers, which have a cylindrical tube, of which the upper side is yellow, the subulate dorsal sepal being of the same colour, and fully 3 inches long, while the lower side of the tube is rich purple-brown, which colour is continued on the two lanceolate lateral sepals, the subulate tails of which are as long as that of the dorsal sepal, and green for fully two-thirds of their length. Flowers produced during the summer months.—*Caracas*.

FIG.—*Flore des Serres*, t. 2150; *Woolward's Masd.*, ii. t. 16.

M. MEASURESIANA, *Rolfe.*—One of the now becoming numerous hybrid *Masdevallias*, the result of a cross between *M. towarensis*, the seed-bearer, and *M. amabilis*, named after R. J. Measures, Esq., of Camberwell. "In habit the plant somewhat resembles the pollen-parent, also in the terete peduncles; but in shape and colour of the flower the characters approximate more nearly to the mother plant. The perianth is white, the nerves and margin lilac, and the tails purplish-brown near the base, paler and greener towards the apex" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 379).—*Garden hybrid*.

M. MELANOPUS, *Rehb. f.*—This is a small-growing and very beautiful small-flowered species, which requires to be grown into a good mass to become effective. The stems are tufted, and with the leaves attain to about 6 inches in height; scape slender erect, bearing numerous flowers which are campanulate, white, dotted with purple, each sepal bearing a long yellow tail at the tip. Flowers in spring and early summer.—*Peru*.

FIG.—*Bot. Mag.*, t. 6258 (*M. polysticta*).

M. MELANOXANTHA, *Rchb. f.*—An old species discovered by the late L. Schlim, at Ocaña; it appears to be rare in collections, for many plants found under this name in gardens are not *M. melanoxantha* at all but *M. Mooreana*. It is described in the *Gardeners' Chronicle*, n.s., 1875, ii. p. 590, as follows:—"The flowers reach the length of an inch, or even surpass it in their native place. They are most remarkably two-lipped; the yellow tube is very short, rather prismatic, with a very small chin; the superior lip is linear-acuminate, yellowish inside, whitish-greenish outside, usually erect, and is greatly varied, now being very narrow, now rather broad; the inferior lip is much broader, usually a little shorter, bi-fid in two triangular acuminate laminae at its anterior third, and covered with an immense quantity of small, acute, brownish-dark warts on its inner surface, which appears even to be more abundant on the six nerves; the outer surface is pallid whitish-green, without any rough surface, which, however, is also, though much less, to be seen on the inside of the superior sepal" (H. G. Reichenbach).—*U. S. of Colombia*.

M. MILITARIS, *Rchb. f. et Warsc.*—As there seems to be some confusion respecting this species, we feel we cannot do better than give the late Professor Reichenbach's description, taken from the *Gardeners' Chronicle* (n.s., 1890, xiii. p. 742):—"It was called, from its flowers reminding one of English soldiers' jackets, *M. militaris*; and the next critical species is *M. ignea*, with its dazzling flowers. It is very easily recognised by its exceedingly stiff dark green leaf, of great substance, standing on a petiole shorter than the blade, by a thicker peduncle, a much wider flower-tube, and a wider limb, the first yellow, the limb cinnabarine, now partly yellow; the lip is much broader and shorter. The plant does not flower very readily, while *M. ignea*, with its much broader and longer, lighter green, thinner long-stalked leaves and much less wide flowers gives a profusion of bloom. It was originally discovered by M. Warszewicz."—*New Grenada*.

M. MOOREANA, *Rchb. f.*—The late Professor Reichenbach in dedicating it to Mr. F. W. Moore, of the Glasnevin Botanical Gardens, described this as follows:—"A very interesting *Masdevallia*, nearest to *M. elephanticeps*, but smaller by one-third in all its parts; it has a flower 3 inches long, yellowish or light green outside, with greenish darker nerves, a reddish hue under the lateral sepals; the lower lip formed by the lateral sepals is deeply bi-fid, with long triangles, and well-developed tails, their inner surface being very rough, all nearly chocolate-brown; the upper sepal has a very short triangular blade and a very long tail; the petals are rhombic, with a strong ridge in the middle line; lip oblong, nearly covered with asperities; bract narrow, much shorter than the stalk of the ovary; peduncle and stalk of a very yellowish-white, with numerous small reddish freckles; leaf exceeding a span in length, oblong-ligulate, blunt acute, with a narrower petiolar base" (*Gardeners' Chronicle*, n.s., 1884, xxi. p. 408). Flowers produced in winter.—*U. S. of Colombia*.

FIG.—*Bot. Mag.*, t. 7015.

M. NYCTERINA, *Rchb. f.*—A very curious species of the *Chimaera* group, and one which was originally figured and sent out for that species by M. Linden; it, however, proves to be not only distinct from, but altogether inferior to it in its grotesque beauty. The plant is of moderately strong

growth, with oblanceolate leaves, keeled behind and tapered to the base; the scapes, which each bear one blossom, are much shorter than the leaves, and spread out horizontally; the flowers have a short slender dark purple tube, and three sepals, which together form a triangular limb about 2 inches deep, each being continued into a subulate tail about 2 inches long, so that the expanse of the flower from tip to tip of the opposite tail is about 6 inches; the colour of the broader parts is a pale buff-yellow, beautifully blotched and spotted with purple-brown, the whole of the surface being also covered with minute hairs, and the tails are wholly of the same purple-brown tint as the spots; the lip, which in these plants is seldom conspicuous, is here larger than usual, and forms rather a prominent object in the centre of the flower, having a buff strap-shaped claw and an incurved sacciform white limb. This species forms a very interesting subject for a basket, as the flowers are produced horizontally from the base of the plant. Blooms in summer.—*New Grenada*.

FIG.—*L'Ill. Hort.*, 3rd ser., tt. 117, 118 (*Chimaera*); *Floral Mag.*, 2nd ser., t. 150; *Gard. Chron.*, n.s., i. p. 639, f. 134; *Id.*, xvi. p. 336, f. 64.

M. PARLATOREANA, *Rchb. f.*—Another natural hybrid, believed to have the same parentage as *M. splendida*, but to be the inverted cross of that, as Messrs. J. Veitch & Sons have produced artificial hybrids between the two species which cannot be distinguished from the natural hybrids. "Since in the shape of the flower it comes very near to *M. Barlaeana* we may now guess that it is perhaps a hybrid between *M. Veitchiana* and *Barlaeana*, and *M. spectabilis* between *Veitchiana* and *amabilis*. As in *M. Barlaeana*, there is a very wide interval between the lateral sepals, which are remarkably short tailed; the flowers are light flesh colour (salmon colour) outside, finest scarlet with amethyst warts inside, the small inner organs being white and violet-amethyst; the sepals have a short stalk, they are oblong-ligulate, acute, semi-sagittate at the base, with a longitudinal oblique keel; the lip is oblong, with obscure lateral blunt lobes, it is white, with a very dark violet spot at the top, and a longitudinal middle line that is violet, and spreads in two shanks towards the base; column semi-terete, acuminate, white with violet angles" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1879, xi. p. 172). It was dedicated to the late Professor Filippo Parlatore of Florence, an eminent botanist.—*Peru*.

M. PERISTERIA, *Rchb. f.*—This is rather a showy species of the coriaceous group and a strong grower. It has been introduced some fifteen or sixteen years and has become plentiful. Stems densely clustered, attaining a height of about 6 inches; leaves broadly oblong, obtuse, very thick and fleshy in texture, deep green, and persistent; scape some 3 inches high, stout, erect, bearing a somewhat large triangular flower, the sepals being each lengthened out into a long tail-like point, tubular portion of flower strongly ribbed on the exterior, colour clear yellow, in some forms greenish-yellow, in others rich tawny-yellow, thickly dotted with reddish-purple, tails yellow; lip prominent, recurved at the point, freely dotted with bright purple protuberances. Flowers in the spring months.—*Antioquia, U. S. of Colombia*.

FIG.—*Bot. Mag.*, t. 6159; *Flore des Serres*, xxii. t. 2346.

M. POLYSTICTA, *Rchb. f.*—A very pretty free-blooming species of the racemose-flowered group. The plants form a dense tuft of spatulate-

oblanceolate obtuse or retuse three-nerved leaves, and produce numerous scapes taller than the leaves, each bearing a raceme of from six to eight flowers, which are of a very pale lilac, almost white, and speckled all over with purple, the filiform tails, which are about 1 inch long, being olivaceous spotted

with purple. In form the flowers have a short tube, an ovate cymbiform dorsal sepal, and narrower obliquely oblong lateral sepals, all of which are ciliate at the edge. Blooms in winter.—*Northern Peru.*



MASDEVALLIA POLYSTICTA.

tween the two parents; the flower is intermediate in size, but in form reminds one most of *M. Shuttleworthii*; in the colouring it has the superb scarlet-vermilion of *M. Veitchiana*, but not quite so brilliant; the surface is covered with a number of minute papillae of a reddish-brown.—*Garden hybrid.*

FIG.—*Lindenia*, ix. t. 387.

M. RACEMOSA, *Lindl.*—This is a beautiful plant, but one that has not yet realised the expectations formed of it; the racemes sent home with the original importation of this species show them to have carried many flowers, but under cultivation we have not yet seen more than four or five blooms, these are however exceedingly showy; the plant has a slender creeping rhizome, from which arise its short stems; scape a foot or more long; many-flowered, flowers upwards of 1 inch across, brilliant orange-scarlet; the lateral sepals constitute the beauty of this flower, and these are destitute of tails, the upper sepal is very small and reflexed.—*New Grenada.*

FIG.—*Veitch's Man. Orch. Pl.*, v. p. 58.

M. RADIOSA, *Rehb. f.*—A pretty little species, with flowers in the way of those of *M. Chimaera*, but only about two-fifths of their size; the inner surface of the flower is blackish-purple, being densely covered with blackish warts on a purple ground, and the tails are almost black; the lip is white. It was discovered by Mr. Wallis. Flowers produced in spring.—*New Grenada: Frontin.*

FIG.—*Veitch's Man. Orch. Pl.*, v. p. 59.

M. REICHENBACHIANA, *Endres.*—A distinct and free-flowering species, which when discovered by the late Mr. Endres, was named by him after his

friend Professor Reichenbach. The plant is similar in the outline of its flowers to *M. coriacea*. It is of densely tufted habit, with narrowly spatulate carinate leaves, and an angular three-flowered scape, which somewhat exceeds the leaves; the flowers are thin in texture, 2 inches long, and have a funnel-shaped tube very narrow at the base, the dorsal sepal triangular caudate, the lateral sepals elongate triangular, with short slender tails; they are yellowish-white with a blood-red blotch on the posterior part in the typical form, in other varieties with radiating blood-red lines, or a nearly black blotch. Flowers in summer.—*Costa Rica*.

FIG.—*Lindenia*, vi. t. 250; *Gartenflora*, 1892, t. 1365; *Woolward's Masd.*, ii. t. 18.

M. ROEZLII, *Rchb. f.*—An interesting species, whose flowers resemble those of *M. Chimaera* both in their triangular outline and their dark purplish-brown colour; the leaves are oblong ligulate; the flowers are produced singly on the scape, which has the peculiarity, as is usual in the group (*vide Rchb.*), of developing blossoms in succession, though only after a considerable interval; the perianth is spread out nearly flat, the sepals, which are only connate at the very base, having an oblong limb extended at the apex into an entire linear-filiform tail about 2 inches long; the small ligulate bi-lobed petals and broadly saccate lip occupy the centre, the latter being entire at the edge with the front inflexed, and having down the centre three longitudinal nerves and several transverse nervilles on each side; the colour of the flower is a fine deep blackish-purple, with still darker warts near the margin, the disk pale and somewhat tessellated; the petals and lip are light mauve, the former having beautiful dark eye blotches. Blooms in summer.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 186, f. 2; *Lindenia*, i. t. 15.

M. ROEZLII RUBRA, *Hort.*—A handsome and brighter-coloured form of *M. Roezlii*, with erect flower-scapes 6 to 8 inches long, and large widespread flowers, the three triangular sepals being only connate at the very base, each tipped by a chocolate-red tail 3 or 4 inches long; the general colour of the flower is a creamy yellow, mottled with dark chocolate-red, and the inner surface is scabrous; the petals are narrow, round at the top, pale fawn with a purple spot near the end, and the lip is yellowish, tongue-shaped, roundish-oblong in front, with inflexed edges.—*New Grenada*.

FIG.—*Orchid Album*, vi. t. 243.

M. ROLFEANA, *Kränzlin*.—This was flowered by Messrs. Sander & Co., and exhibited by them before the Royal Horticultural Society. Dr. Kränzlin describes it as follows:—"A very remarkable new species, in the way of *M. relifera*, *Rchb. f.* The flowers have, with the tails, a length of 2½ inches, the tails themselves being about 1½ inch, the upper one is straight, the lower ones are curved backwards at the base, and upwards at the ends; the whole flower has a rich chocolate-brown colour, except at the basal parts of the tube, where it is honey-coloured; the thick and leathery leaf is about twice as long as the one-flowered flower-stalk, it is obovate-cuneate, three-toothed at the apex, the middle tooth is much smaller than the lateral ones; the flower-stalk is very short, having scarcely the length of the pedicelled ovary, which is itself much longer than its sheath leaf" (*Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 488).—*U. S. of Colombia*.

M. ROSEA, *Lindl.*—Although described long since it was not until 1880 that this species was introduced into cultivation.



MASDEVALLIA ROSEA.

(From the *Gardeners' Chronicle*.)

It is a dwarf-growing plant, producing its flowers in great profusion, and for cultivators offers altogether a new and distinct type. The plant is of tufted habit like the rest; its leaves are elliptic acute and long-stalked, and its scapes are longer than the leaves, bringing the flowers well up into view; they have a cylindrical tube 1 inch long, which is deep crimson-purple above and rosy-lilac beneath; the dorsalsepal is filiform, $2\frac{1}{2}$ inches long, bent down closely over the lateral ones, which are semi-ovate, with an attenuated point as long as the dorsal one, and of a bright rose colour, the attenuated tail-like portion being crimson-purple.—*Peru*.

FIG.—*Gard. Chron.*, N.S., xiii. p. 681, ff. 117, 118; *Id.*, xvi. p. 337, f. 63; *Journ. of Hort.*, 1886, xiii. p. 71, f. 11; *Veitch's Man. Orch. Pl.*, v. p. 61; *Woodward's Masd.*, i. t. 7.

M. SCHLIMII, *Linden.*—A distinct species, producing as many as from six to eight secund long-stalked flowers on a tall scape, each flower issuing from a bluntish sheathing bract. The plant is of stoutish habit, the stalked oblong leaves narrowed to the base being 1 foot long and 3 inches broad; the flowers are handsome and dissimilar; the dorsal sepal is considerably smaller than the others, with a triangular base, soon narrowing into the thickish tail; the lateral ones are more oblong, suddenly narrowing into tails of about 2 inches long; the colour is a reddish-brown, with yellow tails and dorsal sepal; on closer inspection the inner and upper part of the lateral sepals may be seen to be also yellow, but covered with innumerable small reddish-brown spots, while the petals are white, and the lip yellowish spotted over with reddish-brown. It flowers during the winter months—November to February in its wild habitats—and was first flowered by Sir Trevor Lawrence, Bart.—*U. S. of Colombia*.

FIG.—*Gard. Chron.*, N.S., xix. p. 532, f. 80; *Bot. Mag.*, t. 6740; *Veitch's Man. Orch. Pl.*, v. p. 62; *Woodward's Masd.*, ii. t. 19.

M. SHUTTLEWORTHII, *Rehb. f.*—A very free-flowering and beautiful little species, with tufts of elliptic-oblong sub-acute three- to five-nerved leaves about 4 to 5 inches high, and scapes of nearly the same height, bearing each a comparatively large flower, which has a very short gibbous tube, and a sub-erect somewhat hooded dorsal sepal of a pale yellowish colour tinted with pale rosy-red, and marked with several wine-coloured nerves, the obliquely ovate



MASDEVALLIA ROSEA.
(From the *Gardener's Chronicle*.)



MASDEVALLIA VEITCHII (A) AND M. TOWARENSIS (B).
 (From the *Gardener's Chronicle*.)

decurved lateral sepals rose-coloured, thickly studded with deep reddish-purple spots; all three sepals are contracted, the dorsal one suddenly, and the lateral ones more gradually into tails about three times their own length, which are green at the base, changing to orange-yellow towards the tips. It blossoms during the spring and summer months.—*U. S. of Colombia*.

FIG.—*Orchid Album*, i. t. 5; *Bot. Mag.*, t. 6372; *Lindenia*, iv. t. 182; *Reichenbachia*, i. t. 13; *Veitch's Man. Orch. Pl.*, v. p. 28; *Gartenflora*, 1890, t. 1329.

M. SHUTTLEWORTHII XANTHOCORYS, *Rchb. f.*—A pretty variety with smaller flowers than the preceding, and paler in colour without any rosy tint; the upper sepal is prettily striped with yellowish-brown. It is said to be more fragrant than the type. Blooms in spring.

FIG.—*Reichenbachia*, i. t. 13 (lower figure).

M. SPLENDIDA, *Rchb. f.*—A natural hybrid, sent over with consignments of *M. Veitchiana* and *M. Barlaeana*, which two species are believed to be its parents. "It is a great satisfaction to have a second, which makes one think of a mule between *M. Veitchiana* and *M. Barlaeana* or *amabilis*. It is not *M. Veitchiana*, on account of its long slender perigonal tube, the quite abrupt tails of its sepals, its not three-lobed but ligulate lip, and the semi-sagittate anterior base of its petals. One might form a good idea of it by taking a peduncle of *amabilis*, making it shorter and stronger, crowning it with a far greater flower, giving it full scarlet inside in lieu of purple, and then letting it have inside that wonderful violet papillaceous hue. The petals are white; the lip white, with a violet disk and a dark violet knob at its tip, and there is a violet line on each side of the white column. A recommendation of the novelty would be quite superfluous" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1878, ix. p. 492).—*Peru*.

M. STELLA, *Rolfe*.—Another of the hybrid *Masdevallias* obtained by Capt. Hincks, of Thirsk. This is a cross between *M. Estradae* and *M. Harryana*, and is described by Mr. R. A. Rolfe as follows:—"Leaves elliptical-obovate, petiolate; scape 7 to 8 inches high; perianth tube narrow, compressed, straight, sharply keeled behind, yellow on sides and in throat; dorsal sepal elliptical, concave, lilac-purple, with purple mid-nerve, and faint side-nerves, keeled behind, tail brownish-yellow, 2 inches long; lateral sepals broadly falcate-oblong, diverging at base, nearly an inch long, lilac-purple, with purple mid-nerve; tails a little shorter than that of the dorsal sepal; petals obliquely oblong, obtuse, front angle produced in an acute auricle, white; lip oblong, obtuse, white, with numerous lilac-purple dots, and a deep dull purple apical tooth" (*Gardeners' Chronicle*, 3rd ser., 1890, viii. p. 325).

M. TOVARENSIS, *Rchb. f.*—This is a very distinct and beautiful species, easy of culture, and much sought after on account of its producing a profusion of white flowers, which are invaluable as cut flowers for many decorative purposes. The plant, moreover, lasts a long time in bloom, and thus makes up, with its modest beauty, for any deficiency that might be suggested through comparing it with larger-flowered and more attractively coloured sorts. It forms a tuft of oblong-spathulate bi-dentate leaves a span long, and has two-edged scapes of about the same height, bearing flowers of the purest white, in which the sepals coalesce into a short tube, the dorsal one gradually tapered into an awn-like tail nearly 2 inches long, and the lateral ones are longer,

semi-ovate, an inch long, suddenly narrowed into a tail of about equal length the tails all greenish-white. The flowers are sweet-scented, and generally grow in pairs. This plant was at one time extremely rare in cultivation, but it has been imported in such quantity that it can now be purchased at a very moderate cost. It flowers during the winter months.—*U. S. of Colombia.*



MASDEVALLIA TOVARENSIS.

(From the *Journal of Horticulture*.)

FIG.—*Bot. Mag.*, t. 5505; *Batem. Second Cent. Orch. Pl.*, t. 120; *L' Ill. Hort.*, 3rd ser., t. 363; *Gard. Chron.*, 1865, p. 914, with fig.; *Id.*, N.S., xvi. p. 409, f. 79 B; *Puydt, Les Orch.*, t. 24; *Journ. of Hort.*, 3rd ser., x. p. 153, f. 27 (specimen plant); *Florist and Pom.*, 1873, p. 169, with tab.; *Revue Hort. Belge*, 1883, p. 25 (plate); *Lindenia*, iv. t. 171; *Veitch's Man. Orch. Pl.*, v. p. 64; *Woolward's Masd.*, ii. t. 20.

SYN.—*M. candida*.

M. TRIANGULARIS, *Lindl.*.—A curious and interesting little species. The leaves are oval-lanceolate acute, 4 inches long, the scape filiform, the flowers spreading, with the sepals equal triangular, scarcely 2 inches long, ochre-yellow dotted with purple, the long slender tails deep red. It flowers in December and January.—*U. S. of Colombia.*

FIG.—*Woolward's Masd.*, iii. t. 29.

M. TRIARISTELLA, *Rchb. f.*.—A singular little species with densely tufted stems, and subulate leaves, which never exceed 2 inches in height. Scape slender, erect, nearly 3 inches high, and bearing one or two flowers about an inch long; the upper sepal slightly reflexed, narrow, yellow; lateral sepals also narrow, connate their entire length, reddish-brown both on the outside and the anterior half of the inner side, the basal part orange-yellow, and furnished with a long slender tail which proceeds from the sides, some distance above the tips. Flowers in the summer and autumn months.—*Costa Rica.*

FIG.—*Bot. Mag.*, t. 6268.

M. TROCHILUS.—See *M. EPHIPIUM.*

M. TROGLODYTES, *Morren.*.—In this we have a very singular little plant, and although it cannot boast of size, it is a profuse bloomer. The leaves are narrowly lanceolate, acute, furnished with three short points, from 3 to 5 inches long, pale green and persistent; scape slender, bearing a solitary flower, and becoming pendent with its weight; sepals campanulate, creamy-white on the outside, reddish-purple inside, the tip of each sepal furnished with long slender filiform tails, which are deep brown and spreading. Flowers in the winter months.—*Medellin, New Grenada.*

FIG.—*Belg. Hort.*, 1877, p. 97, t. 5.

M. VEITCHIANA, *Rchb. f.*.—A most beautiful species, with flowers of resplendent colour. The leaves are densely tufted, 6 or 8 inches long, linear-oblong, leathery, of a dark shining green; the scape bears a solitary flower about 6 inches across in its longest diameter, the sepals connate into a tube at the base, ovate the lateral ones oblique, and each lengthened out into a tail at the points; they are of a bright orange-scarlet, exceedingly rich, from the inner surface being studded with minute papillae of a brilliant cadmium-yellow and also beautifully shaded with purple; the eye or mouth of the tube is bright yellow, and contains the small and unattractive petals and lip. This noble species blooms usually during the autumn months, lasting long in perfection,



MASDEVALLIA TRIARISTELLA.

but sometimes also flowers in April and May; it requires very cool treatment.—*High Mountains of Peru.*

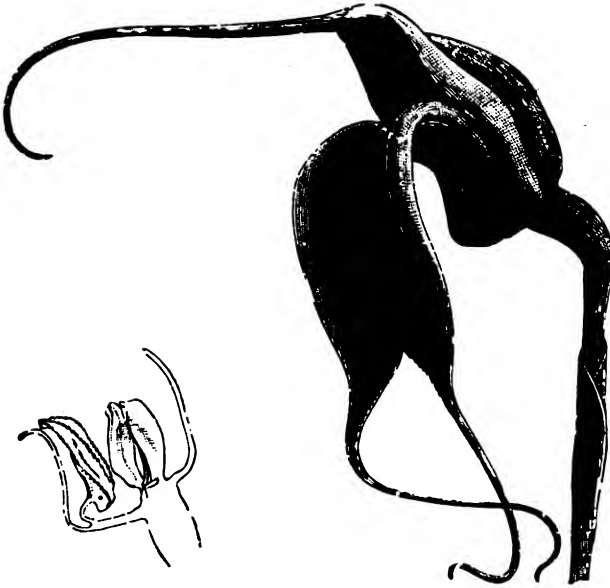
FIG.—*Bot. Mag.*, t. 5739; *Flore des Serres*, t. 1803; *Floral Mag.*, t. 481; *Warner, Sel. Orch. Pl.*, ii. t. 33; *Gard. Chron.*, 1871, p. 1421, f. 310; *Id.*, n.s., xvi. p. 409, f. 79 A; *Puydt, Les Orch.*, t. 25; *Florist and Pom.*, 1873, p. 169, with tab.; *Revue Hort. Belge*, 1883, p. 25 (plate); *Veitch's Man. Orch. Pl.*, v. p. 68; *Woolward's Masd.*, i. t. 10.



MASDEVALLIA VEITCHIANA.
(From the *Journal of Horticulture*.)

M. VEITCHIANA GRANDIFLORA, *Williams*.—A very large-flowered and handsome variety, producing flowers from 5 to 7 inches in length, of great substance, and of a bright orange-scarlet colour deeply shaded with purple. We first saw this grand form in the collection of His Royal Highness the Prince of Wales at Sandringham. It flowers during the summer months.—*Peru.*

M. VELIFERA, *Rehb. f.*—This curious *Masdevallia* was introduced by us through Mr. C. Patin, in 1874, and flowered with us in the same year. It belongs to the *Leontoglossae* group, which have the paired sepals connate. "The great curiosity is that the body of the lateral sepals is strictly bent down, which gives it a most curious appearance, the whole flower is covered with a splendid gloss as if varnished. The base is green outside and turns thus from brown shades to light brown till to the yellow of the borders and tails is



MASDEVALLIA VELIFERA.

(From the *Gardeners' Chronicle*.)

reached. The odd sepal is covered inside with numerous small spots. The connate sepals have only the borders and tails yellow inside, while the remainder inside is of a most curious brown, that one may paint by mixing a reddish-brown with sepia. This adds a great charm to the quite extravagantly formed species. The petals are light green, and the lip inside of the darkest brownish-purple."—*U. S. of Colombia*.

FIG.—*L'Orchidophile*, 1883, p. 544; *Gard. Chron.*, 3rd ser., 1887, i. p. 745, f. 142.

M. VESPERTILIO, *Rehb. f.*—A very pretty little species with narrow, thick and leathery leaves, which are about 5 inches long, and deep green; scape pendent and one-flowered, flowers triangular and long-tailed, ground colour creamy-white, dotted with wart-like spots of purple.—*U. S. of Colombia*.

M. WAGENERIANA, *Linden.*—This is truly a pigmy Orchid, the whole plant not growing more than 2 or 3 inches high. It has the same tufted habit as the rest of the genus, with spatulate obtuse coriaceous leaves, and filiform scapes

of about equal length, bearing each one flower, which has a short cup-shaped tube, formed by the united bases of the three broad ovate sepals, which are yellow, the dorsal one clouded with chestnut red inside, and the lateral ones minutely dotted; the fleshy recurved deeply toothed hook-pointed lip, which is dotted over with red-brown, is a beautiful object when seen through a magnifying glass.—*Venezuela*.

FIG.—*Xenia Orch.*, i. t. 75, f. 2; *Parton, Fl. Gard.*, iii. p. 74, f. 267; *Bot. Mag.*, t. 4921; *Woolward's Masd.*, iii. t. 30.

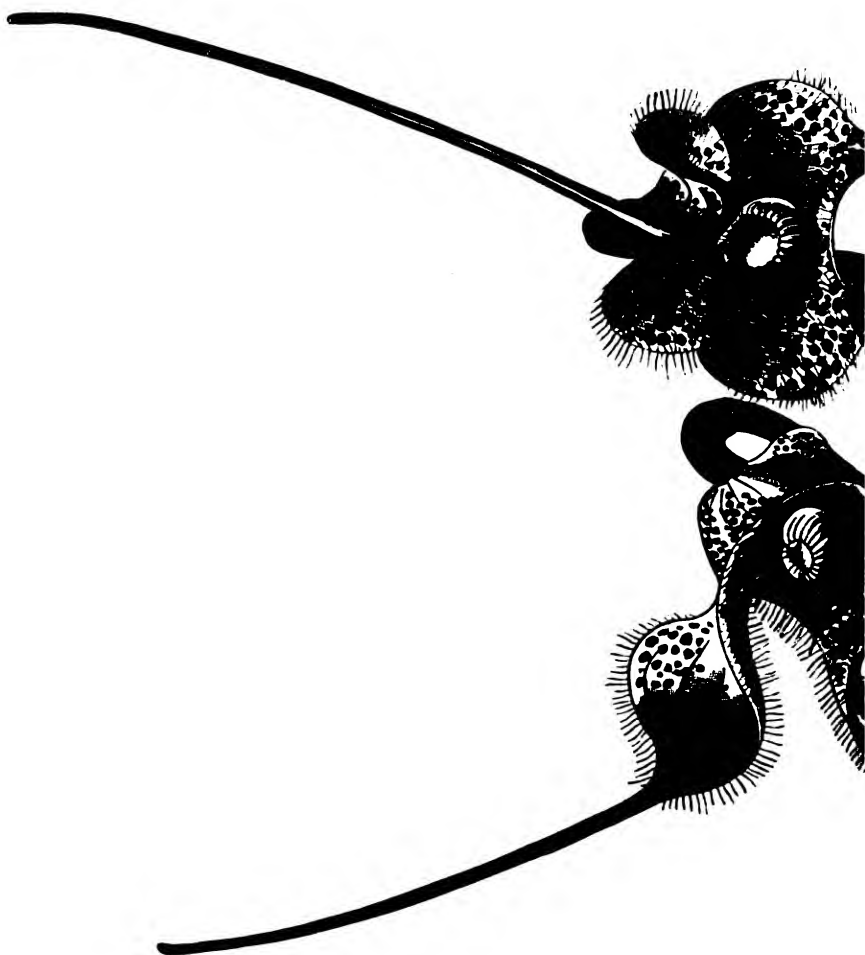
M. WALLISII, *Hort.*—A very interesting plant, which has hitherto in most collections represented the grotesque but withal handsome *M. Chimæra*. The plant has narrowly oblanceolate acute leaves, narrowed to the base, 6 to 9 inches high, and sheathed at the base. The flower scapes are shorter than the leaves, decurved at the top, bracteate, each bearing a solitary flower, which measures 8 inches from tip to tip of the dorsal and lateral sepals, and are of a yellowish ochre colour, with deep purplish red markings, the perianth tube shortly campanulate, the broadly obovate sepals densely fringed, clad on the interior surface with long hairs, and terminating in long purple-red tails. Flowers produced in summer.—*New Grenada*.

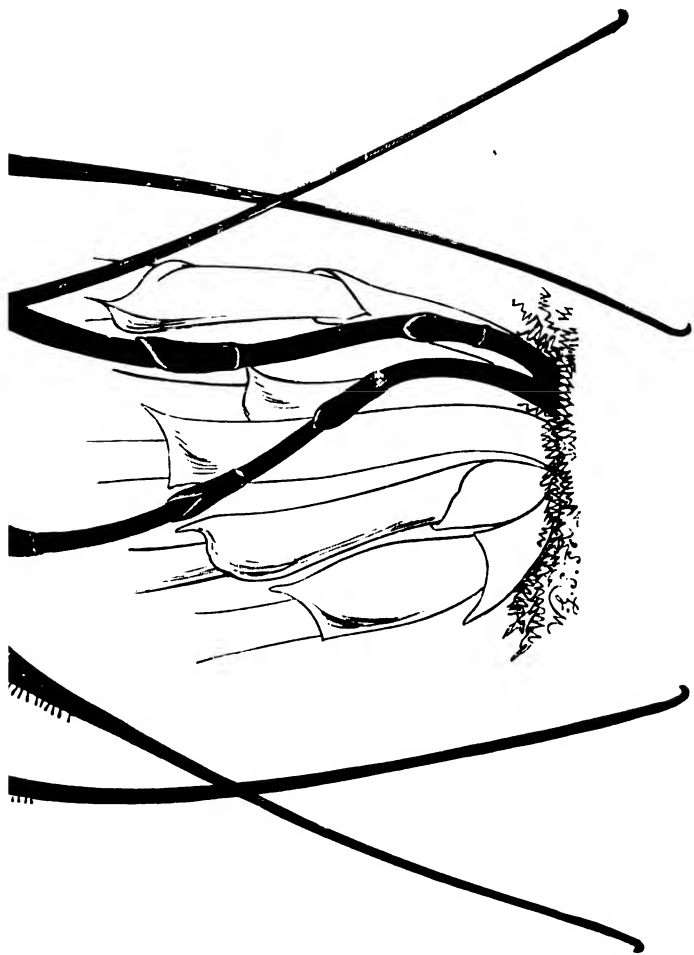
FIG.—*Bot. Mag.*, t. 6152; *Rev. Hort.*, 1881, p. 130, with tab.; *Floral Mag.*, 2nd ser., t. 149; *Gard. Chron.*, N.S., iii. p. 41, f. 5 (*Chimæra*).

M. WALLISII STUPENDA, *Rchb. f.*—This is a remarkably fine variety, the finest of the group yet seen, on account of the breadth of the triangular surface of its sepals, and its rich colouring; the tails are chocolate-coloured, and the same colour occurs at the apex on the outside of the triangular part, mostly on the upper sepal; the colour of the interior is light sulphur, with some large chocolate-coloured spots over the triangular parts, the inner surface being hairy and the margins fringed; the disk around the internal organs is orange, and at each side of the petals stands a white cushion-like body covered with numerous scarlet spots. It blossoms during the winter months. It has been flowered by Sir Trevor Lawrence, Bart.—*New Grenada*.

M. WENDLANDIANA, *Rchb. f.*—Amongst the many gems this genus produces, this is one of the choicest. The late Professor Reichenbach described it as follows:—"It forms dense masses of spatulate minutely bi-lobed leaves, which are surpassed by the slender peduncles, even longer than 3 inches, and bearing a single lovely tubular flower $\frac{3}{4}$ inch in length; the tails are equal to the free triangular bodies; the chin is a very short one, colour snow-white, with two or three mauve lines outside, under the place of the lip; petals white, lip white, with an orange area before the apex, and very numerous very small point-like dark purple spots; column white, with three longitudinal mauve stripes, one on back, one on each angle. It is dedicated to Herr Oberhofgärtner Hermann Wendland" (*Gardeners' Chronicle*, 3rd ser., 1887, i. p. 174). Blooms in winter.—*U. S. of Colombia*.

M. XANTHINA, *Rchb. f.*—A curious little plant in the way of *M. Wageneriana*, but stronger in its growth, and with larger and more attractive flowers; the leaves are cuneate-oblong, and the flowers with scarcely any tube, the three





MASDEVALLIA WALLISII.

Flowers natural size.

(From the *Gardener's Chronicle*.)

sepals spreading, the dorsal one oblong ligulate, galeate, and extended into a longish tail, the dorsal ones somewhat narrower; the colour is a bright yellow with a dark violet blotch at the base of the lateral sepals. Blooms in summer.—*U. S. of Colombia.*

MAXILLARIA, Ruiz et Pavón.

(Tribe Vandeeae, subtribe Maxillarieae.)

This is a large genus of Orchids, numbering over a hundred species, but many of them, on account of the small size of their flowers, are not worthy of cultivation as decorative plants. Those we have enumerated are, however, plants of some character, and deserving a place in collections. Some of them are pseudobulbous, in which case the one-flowered scapes proceed from the base of the bulbs, and others form a stem with dense distichous leaves, these bearing the solitary flowers in the axils of the leaves. The genus has been much diminished by the separation of *Lycaste*, *Colax*, *Promenaza*, *Bifrenaria*, and others, though still containing numerous species.

Culture.—These plants are all of evergreen habit, and can be grown in the cool house with *Odontoglossums*. They succeed best grown in pots, in a mixture of peat and moss, and require a liberal supply of water during their growing season, the amount being reduced during the period of rest, when only just sufficient to keep them in a plump state should be given them.

M. AROMATICA.—See *LYCASTE AROMATICA*.

M. BROCKLEHURSTIANA.—See *HOULLETIA BROCKLEHURSTIANA*.

M. CALLICHROMA, *Rchb. f.*—An old and beautiful species which was discovered by Wagener when collecting in Venezuela, and until recently was extremely rare. It is allied to *M. luteo-alba*, but the scapes are much shorter, and the plant is smaller in all its parts. The sepals are linear lanceolate, white at the base, golden yellow at the extremities; the lateral ones curved inward at the tip in the form of a sickle; the sepals are purplish-brown at the base, white in the middle and yellow at the extremities, strongly curved backward; lip three-lobed, the lateral lobes purplish-brown, mid-lobe white, disk yellow.—*Venezuela.*

FIG.—*Lindenia*, viii. t. 377.

M. CRISTATA.—See *PAPHINIA CRISTATA*.

M. CRUENTA.—See *LYCASTE CRUENTA*.

M. DEPPEI.—See *LYCASTE DEPPEI*.

M. ENDRESII, *Rchb. f.*—Having flowered in the Hamburg Botanic Garden in 1870, this species appears to have been lost sight of until Messrs. Low & Co. intro-

duced it again in 1886. "It has very broad elliptical bulbs, which finally are as much wrinkled, or nearly so, as in an old plant of *Oncidium ampliatum*; leaves cuneate-ligulate, blunt, acute; peduncle rather short; bract equalling, or shorter than the stalked ovary; sepals and petals light ochre-coloured, triangular ligulate, tapering in an acuminate manner, and having a short bristle at the top; petals smaller; side laciniae semi-oblong, angulate at the top, light ochre-coloured with a purple border and similar coloured veins, mid-lacinia oblong-acute, ovary toothletted, ochre-coloured with a yellow disk; a triangular callus, much depressed, between side laciniae; the whole internal area hairy" (H. G. Reichenbach, in *Gardeners' Chronicle*, N.S., 1886, xxv. p. 680).—*Costa Rica*.

M. FUCATA, *Rehb. f.*—In describing this handsome species the late Professor Reichenbach mentions that the distribution of colour is very uncommon, adding with his usual quaint humour.

"I could not help remembering some Harlequins I had seen with the paint not quite washed off their faces." The flowers measure about $1\frac{1}{2}$ inch; the sepals are white at the base, purplish in the middle, yellow with red spots at the apex; petals similar to the sepals but without the spots at the apex. It first flowered in the collection of Sir Trevor Lawrence, Bart.—*Ecuador* (?)

FIG.—*Gard. Chron.*, 3rd ser., 1888, iv. p. 577, f. 81; *Vitch's Man. Orch. Pl.*, ix. p. 153.



MAXILLARIA FUCATA.

(From the *Gardeners' Chronicle*.)

has dull maroon-purple side lobes, while the front lobe is deep blackish-brown, with yellow margin and apex, and the fleshy linear callus of shining purple-brown; the short scapes are clothed with about four or five loose imbricating scales" (R. A. Rolfe, in *Kew Bulletin*, 1892, p. 210).—*Brazil*.

M. GRANDIFLORA, *Lindl.*—A handsome species, with the aspect of a *Lycaste*. The pseudobulbs are depressed ovate, two-edged, and of a deep green colour;

M. FULVESCENS.—See *LYCASTE FULVESCENS*.

M. GALEATA.—See *ACROPERA LODDIGESII*.

M. GLUMACEA, *Rolfe*.—A species allied to *M. aciantha* and *M. coriacea*. "The glume-like very acute and rigid sepals are of a dull yellowish-green, as are also the petals; the lip

the erect ovate-oblong leaves are also dark green, and about a foot long; the flowers are produced singly on bracteate scapes about 6 inches in length; the lateral sepals having a spread of about $3\frac{1}{2}$ inches; the oblong-acute sepals and shorter petals are pure white, the lip pouched, dark purple at the sides, the triangular middle lobe yellow in front, white towards the base. A very desirable plant, blooming during autumn, the flowers deliciously fragrant. This fine plant enjoys a very cool atmosphere; indeed, to succeed with it, the coolest end of the *Odontoglossum* house should be selected for its reception, and the atmosphere kept very moist.—*Peru*; *U. S. of Colombia*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 14; *Floral Mag.*, 2nd ser., t. 322; *Humb. and Kunth, Nov. Gen.*, i. t. 88 (*Dendrobium grandiflorum*); *L'Orchidophile*, 1884, p. 327 (plate).

SYN.—*M. Lehmanni*; *Dendrobium grandiflorum*.

M. HARRISONIAE.—See *LYCASTE HARRISONIAE*.

M. HEYNDERYXII.—See *LYCASTE GIGANTEA*.

M. HÜBSCHII, *Rehb. f.*—While collecting for Messrs. Sander & Co., Mr. Hübsch discovered this fine new *Maxillaria*, and it was deservedly dedicated to him by the late Professor Reichenbach, who thus describes it:—"The plant is quite like that of *M. fucata*; the peduncle has a few inflated sheaths; bracts shorter than the ovary; lateral sepals much rounded; petals linear, rhombic, acute; lip transverse, rhombic; there is a transverse yellow emarginate callus on the disk, and strigose hairs behind; flowers white, as large as those of *Masdevallia molitor*; lip with mauve-purple margin inside, and two blotches of that colour and a few purple dots at the base outside; column white, with nearly parallel mauve stripes in front" (*Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 136). It flowered in the collection of R. H. Measures, Esq., Woodlands, Streatham.—*Peru*.

M. JUGOSA.—See *COLAX JUGOSUS*.

M. KALBREYERI.—See *M. VENUSTA*.

M. LEHMANNI.—See *M. GRANDIFLORA*.

M. LEPIDOTA, *Lindl.*—A compact-growing and free-flowering species. Pseudobulbs varying from ovoid to pyriform, $1\frac{1}{2}$ to $2\frac{1}{4}$ inches high, each bearing one linear-lanceolate leaf from 8 to 10 inches long; scapes erect, one-flowered, shorter than the leaves; sepals narrowly-linear, 3 inches long, yellow at the broader base, purplish-brown; petals about half the length of the sepals, yellow; lip three-lobed, fleshy, yellow, spotted with brown on the exterior side.—*U. S. of Colombia*; *Ecuador*.

M. LONGISEPALA, *Rolfe*.—A compact growing species allied to *M. pentura*, but having larger flowers; sepals and petals pale purplish-brown, striped with a darker tint of the same colour, changing to cinnamon-brown on the outside; lip pale greenish-yellow, with radiating lines of dark reddish-brown on the borders.—*Venezuela*.

FIG.—*Lindenia*, vi. t. 243.

M. LUTEO-ALBA, *Lindl.*—This is a very striking plant when in blossom, both on account of the peculiar tawny colour and the triangular form of its flowers. The pseudobulbs are [ovate compressed, something like those of



MAXILLARIA LUTEO-ALBA.

M. venusta, and the solitary leaves are long and broad, and grow to the height of .18 inches; the large flowers, which are developed at different times of the year, proceed from the side of the bulbs, and have three linear-oblong sepals 3 inches long, of a tawny-yellow in the upper two-thirds, creamy-white in the lower portion, and brownish externally, the three spreading out triangle-wise, and the two lower ones being twisted; the petals are about half as long as the sepals, white at the base, brown about the centre, and yellow at the tip, while the short three-lobed lip is recurved, yellow with paler edges in front, and the side lobes erect, striped with purple.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 106.

M. MACROBULBON.—See LYCASTE MACROBULBON.

M. MACROPHYLLA.—See LYCASTE MACROPHYLLA.

M. NIGRESCENS. *Lindl.*—A very curious and distinct species, with oval compressed pseudobulbs, bearing a solitary oblong-ligulate dark green coriaceous leaf, and producing its flowers singly on erect peduncles; the sepals and petals are spreading, port-wine colour, the lip of the same colour, but stained in addition with dull purple. It blooms at various times of the year, and should be grown in the cool house.—*New Grenada*.

SYN.—*M. rubro-fusca*.

M. PRAESTANS, *Rchb. f.*—This beautiful species was collected in 1884 by Mr. J. C. Lehmann in Guatemala. The following description is taken from the *Gardeners' Chronicle*, n.s., 1885, xiii. p. 566:—"The bulb is oblong, ancipitous, with convex sides, nearly as shining as those of *Odontoglossum citreumum*; the leaf is of parchment texture, cuneate, ligulate; sepals ligulate, acute; petals narrow, shorter, acuminate; all of a honey colour, yellow with brown spots on base; lip trifid, side laciniae short blunt triangular, mid lacinia cuneate, oblong, acute, very thick, brownish-yellow, with very numerous small brown spots, the basilar laciniae are whitish with purple spots; callus ligulate blunt in front, margins argute; column trigonous, yellow with many purple spots in front below, and a trilobed orange callus at the base." Flowers in April.—*Guatemala*.

M. ROLLISSONII.—See PROMENAEA ROLLISSONII.



MASDEVALLIA WALLISII.
Reduced, shewing habit of growth.
(From the *Gardeners' Chronicle*.)

M. RUBROFUSCA.—See *M. NIGRESCENS*.

M. SANDERIANA, *Rehb. f.*—This new and beautiful species resembles a gigantic form of *M. grandiflora*. The sepals are pure white, spotted and stained at the base with dark chocolate-brown; the petals are much smaller than the sepals, white, thickly spotted with chocolate at the base; the lip is similar to that of *M. grandiflora*, but larger in all its parts. It first flowered in this country in the collection of Baron Sir J. H. W. Schröder, under the care of Mr. Ballantine, and later in our own collection. It flowers in May.—*Peru*.

FIG.—*Reichenbachia*, i. t. 25; *Journ. of Hort.*, 1886, xiii. p. 389, f. 57; *The Garden*, 1887, xxxii. p. 60, t. 606; *Journ. of Hort.*, 1891, xxii. p. 445, f. 83; *Veitch's Man. Orch. Pl.*, ix. p. 160; *Orchid Album*, x. t. 463; *Gardening World*, ix. p. 549 (woodcut).

M. SANDERIANA ATRO-PURPUREA, *H. Williams*.—A fine variety similar to the preceding, but having a dark purple lip.

M. SANDERIANA XANTHOGLOSSA, *Hort. Sander*.—A fine variety with large flowers, having the front lobe of the lip fimbriated, and of a pale yellow shade.

FIG.—*Journ. of Hort.*, 1893, xxvi. p. 495, f. 89.

M. SKINNERII.—See *LYCASTE SKINNERII*.

M. SPLENDENS, *Poepp. et Endl.*—A very handsome plant, deserving a place in every collection. In growth it is something like *M. venusta*, but more robust. It has oval ancipitous pseudobulbs, solitary long linear leaves, attenuated at the base, obliquely bidentate at the apex, and rather large flowers on one-flowered fascicled scapes, the sepals and petals being unspotted white, and the lip orange, margined with rose.—*Peru*.

FIG.—*Poepp. et Endl., Nov. Gen. et Sp.*, i. t. 66.

M. STAPELIOIDES.—See *PROMENAEA STAPELIOIDES*.**M. STEELII.**—See *SCUTICARIA STEELII*.

M. TENUIFOLIA, *Lindl.*—One of the oldest species known to horticulturists, having flowered in the Chiswick Gardens of the Royal Horticultural Society as long ago as 1839. Leaves very narrow linear, exceeding 1 foot in length; flowers measuring about 2 inches across, yellow densely spotted with crimson.—*Mexico*.

FIG.—*Bot. Reg.*, 1839, t. 8.

M. TRILORIS, *Morren*.—The flowers resemble in a great measure those of *M. luteo-alba*, but differ in having a pale purplish tint. This is a wonderfully free-flowering plant, and we first noticed it in the large Winter Garden at Laeken, Belgium, belonging to H.M. The King of the Belgians, where a number of plants, literally covered with blossom, were placed on pedestals about 4 feet from the ground in suitable positions, and the effect was most charming. Mr. H. Knight, the able director of the Royal Parks and Gardens, assured us that it is one of the most useful Orchids he had under his charge.—*South America*.

FIG.—*Belge Hort.*, 1870, t. 13.

M. TURNERI, *Hort.*—A very distinct and pretty species, with short pseudobulbs, long broad leaves 1 foot high of a very dark green colour, and flowers of a rich cinnamon-brown and crimson, with a delicious fragrance; it blooms in May in great profusion, and continues a long time in perfection.—*South America.*

M. VENUSTA, *Linden et Rehb. f.*—This plant is one of the best of the genus, of easy culture, blooming at different times in the year, and continuing for three or four weeks in perfection. It has bluntly oblong compressed pseudobulbs, bearing at the top a pair of broad oblong-lanceolate leaves, nearly a foot long, and producing from their base the one-flowered red bracteate scapes, which are much shorter than the leaves, and bear a large showy somewhat nodding white flower, with the front lobe of the lip yellow, the edges of the lateral lobes crimson, and two crimson spots on the disk, where also is a great roundish tomentose callus; the sepals and petals are all spreading and attenuately acuminate at the apex, the sepals being nearly or quite 3 inches long. There are two varieties of this species, one having the flowers superior in being larger and more pure in colour than the other.—*New Grenada: Ocaña; Venezuela.*

FIG.—*Bot. Mag.*, t. 5296; *Batem. Second Cent. Orch. Pl.*, t. 118; *Pescatorca*, t. 38; *Gard. Chron.*, 3rd ser., 1892, xii. p. 367, f. 60; *Orchid Album*, xi. t. 492.

SYN.—*M. Kalbreyeri.*

M. VIRGINALIS.—See *LYCASTE SKINNERII*.

M. VITELLINA.—See *BIPRENARIA VITELLINA*.

M. WARREANA.—See *WARREA TRICOLOR*.

MESOSPINIDIUM.—See *COCHLIODA* AND *ADA*.

MICROCHILUS.—See *PHYSURUS*.

MICROSTYLIS, *Nuttall.*

(Tribe Epidendreae, subtribe Malaxaeae.)

A genus of terrestrial Orchids of dwarf habit, sometimes pseudobulbous, the stems bearing near the base several handsomely coloured plicate leaves, and terminating in a spike of very small flowers. There are many species known, and they are widely dispersed in Europe, Asia, and America; but those in cultivation are mostly tropical, and deserve a place with the *Anoectochili*, being all interesting to those who desire to have a general collection; amongst these may be mentioned *M. Wallichii*, *M. Rheidii*, and *M. versicolor*.

Culture.—The same as that of *Anoectochilus*, which see.

M. BELLA, *Rchb. f.*—A handsome plant with cylindrical pseudobulbs and large oblong leaves. The somewhat small flowers are produced in great numbers on each raceme; sepals and petals are pale purple-green at the extremities; the purple lip is furnished with very long auricles.—*Malay Archipelago*.

FIG.—*L'Illustr. Hort.*, xxxiii. t. 181.

M. CALOPHYLLA, *Rchb. f.*—A distinct and handsome species, with ornamental foliage. The leaves are oval lanceolate acuminate, prettily undulated, 4 to 6 inches long, 2 to 2½ inches broad, greenish-brown in the centre, and having a broad margin of pale greyish-green, which is prettily spotted over its entire surface with the same colour as the centre of the leaf, the under surface pale green; flowers small, yellowish.—*Java*.

M. CHLOROPHYRS, *Rchb. f.*—This is a most desirable species, with foliage of a very distinct character. The leaves are elongate elliptic acute, with neatly undulated margins, the upper surface of a purplish brown colour, bordered with light green, and the under surface light purple. The flowers are purple with an orange-coloured lip.—*Borneo*.

M. DISCOLOR, *Lindl.*—This is the prettiest of the species of this curious family yet in cultivation. It is a terrestrial plant, with clustered stems 8 or 10 inches high, which are leafy above, the broadish leaves, which are ovate oblong with a sheathing petiole, being plaited, of a deep reddish-purple, with an elegantly crisped green border, and terminating in a short upright spike or raceme of small crowded flowers, which are at first yellow and change to orange-colour.—*Ceylon*.

FIG.—*Bot. Mag.*, t. 5403; *Wight, Icon. Pl. Ind. Or.*, t. 1631.

M. JOSEPHIANA, *Rchb. f.*—This is at once a beautiful and singular plant of large size for the genus and somewhat showy; the pseudobulbs are oblong, about 4 inches high, these are surmounted with a few leaves of an oblong lanceolate form, from 3 to 6 inches in length, much plaited and of a delicate bronzy shade on the upper side, light green below; scape terminal, angular, bearing from three to twelve or more flowers, which are about ¾ inch across, these are a dull yellow, the lip also being yellow, blotched with reddish-brown.—*Sikkim Himalaya*.

FIG.—*Bot. Mag.*, t. 6325.



MICROSTYLIS METALLICA.

M. METALLICA, *Rchb. f.*—An extremely attractive little plant, 6 or 8 inches high, with richly-coloured foliage, which is elliptic acute plicate, slightly undulated at the margin, and of a dark glossy purple above, tinged with light

rose colour beneath. The diminutive flowers are rosy-purple, on erect spikes, and have very narrow sepals and petals, and an obovate pink lip, sagittate at the base.—*Borneo*.

FIG.—*Bot. Mag.*, t. 6668; *Belge Hort.*, 1884, t. 14, f. 1.

M. PURPUREA, *Lindl.*—A fine species, with broadly ovate leaves 4 to 5 inches long and 2 inches or more broad, very much undulated, the upper surface of the leaves of a dark metallic crimson colour, the under surface and petioles of a pale reddish metallic grey. The flowers are yellowish purple.—*Ceylon*.

M. SCOTTII, *Hook.*—A handsome species with ornamental foliage; the leaves are ovate, acuminate plaited, light bronze, the margins yellow spotted with brown; underside of leaves greenish yellow veined with purple, spotted with green. Flowers small.—*Pegu*; *Malay Peninsula*.

FIG.—*Hook. Icon. Pl.*, t. 2001; *Bot. Mag.*, t. 7268.

MILTONIA, *Lindley*.

(Tribe Vandeeae, subtribe Oncidieae.)

This genus includes several beautiful Orchids. They are all of ever-green habit, and compact in growth, and for the most part produce light green foliage which sometimes has a very yellow appearance, but no notice should be taken of this as it is natural to them. The pseudobulbs are short, bearing two or three leaves each, and the flower-scapes, usually one- or two-flowered, are produced from the sides of the bulbs. The lip is sessile at the base of the column, and is broad spreading and undivided; otherwise they come near to *Oncidium*. There are upwards of a dozen admitted species, which are natives of Brazil, U. S. of Colombia, Peru, and Costa Rica.

Culture.—Some of the species of *Miltonia* require treatment different from the others, as will be mentioned when treating them individually. They will succeed in the *Cattleya* house or the cool end of the East India house, but *M. vexillaria* may be grown in the cool house during the summer months. Most of them require to be grown in pots, in peat and moss, with good drainage; and they like a liberal supply of water during the growing season, and to occupy the shadiest part of the house. Propagation is effected by dividing the pseudobulbs at the time when they begin to grow.

M. ANCEPS, *Lindl.*—A singular and rare species, which, after being in cultivation for some time, was lost, and we are indebted to Messrs. Low for its re-introduction. It has narrow oblong compressed yellowish pseudobulbs

2 inches high, each having a pair of narrow ligulate leaves 4 or 5 inches long, and ancipitous scapes taller than the leaves and invested by long sheathing pointed bracts. The flowers are about 2 inches in diameter, produced singly, the sepals and petals oblong-lanceolate, spreading, of a pale greenish-olive colour, the two lateral ones with a bar of reddish purple near the base, the lip rhomboid-lyrate, recurved at the apex, white with two or three reddish-purple bars and spots on the lower half, behind which are a similar number of lamellæ on the pubescent base. Prof. Reichenbach's figure shows the sepals and petals of a citron-yellow. It requires the same treatment as that indicated for *Miltonias* generally.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5572; *Xenia Orch.*, i. t. 21.

SYN.—*M. Pinellii*; *Odontoglossum anceps*.

M. BICOLOR, *Hort.*—A beautiful species with the aspect of *M. spectabilis*, but of a more vigorous habit, growing about 8 inches high. The flowers are large, with white sepals and petals, the lip being also white, with a blotch of violet in the upper part. It blooms in August, and lasts in perfection for six weeks. Of this there are two varieties, one called *M. bicolor superba*, with larger flowers and more white on the lip than in the other.—*Brazil*.

— **M. BLEUANA**, *Hort.*—When this splendid hybrid was first exhibited at the meeting of the "Orchidéenne" at Brussels, it created quite a sensation, and was awarded a "Diploma of Honour." It was raised by M. Alfred Bleu, of Paris, and is the result of a cross between *M. vexillaria* and *M. Roeslii*, joining the characters of the two parents. The petals and sepals being proportionally larger than in *M. vexillaria*, the flowers have a more symmetric appearance than in the parent; petals, sepals, and lip white, this latter organ having some purplish-brown pencilled markings at the base.—*Garden hybrid*.

FIG.—*Lindenia*, iv. t. 176; *L'Orchidophile*, 1889, p. 145 (plate); *Reichenbachia*, 2nd ser., i. t. 32; *Vitch's Man. Orch. Pl.*, viii. p. 119.

SYN.—*Miltoniopsis Bleuana*.

— **M. BLEUANA SPLENDENS**, *Bleu.*—A beautiful variety, differing from the preceding in having the bases of the petals stained with beautiful bright rose, and having the marking at the base of the lip heavier, more regular, and of a soft chocolate-brown.—*Garden hybrid*.

FIG.—*Orchid Album*, ix. t. 412; *Journ. of Hort.*, 1890, xx. p. 461, f. 67.

SYN.—*Miltoniopsis Bleuana splendens*.

M. BLUNTII, *Rehb. f.*—A very distinct plant—a lovely and elegant thing, as Reichenbach calls it, and which he has named after its discoverer. The plant was exhibited by W. Lee, Esq., Downside, Leatherhead, at the Royal Horticultural Society's meeting in October, 1883. In growth and habit it resembles *M. spectabilis*, between which and *M. Clowesii* it is supposed to be a natural mule. The flowers are as large as those of *M. spectabilis*, with lanceolate acute sepals and oblong-lanceolate less acute petals, both creamy white, with some large brownish lilac or cinnamon-purple blotches chiefly in the centre; the lip, which is oblong-ovate obtuse or sub-pandurate, like that of *M. spectabilis*, is white or pale rose with purple-violet stripes at the base, where there are two keels, and the short thick column has two large purple-violet wings.—*Brazil*.

SYN.—*Oncidium Bluntii*.

M. BLUNTII LUBBERSIANA, *Rchb. f.*—A lovely variety with larger flowers than the type; sepals and petals yellow, covered with heavy blotches and bars of a rich chestnut brown. Lip rich rosy purple at the base gradually passing into the white of the front lobe. It was originally sent by Mr. P. Binot to the Brussels Botanic Gardens. It has since appeared in some other collections.—*Brazil*.

FIG.—*Lindenia*, v. t. 203; *L. Orchidophile*, 1890, p. 176; *Journ. of Hort.*, 1891, xxiii. p. 365, f. 72; *Id.*, 1892, xxiv. p. 373, f. 72; *Veitch's Man. Orch. Pl.*, viii. p. 117.

M. CANDIDA, *Lindl.*—A very beautiful strong-growing species, one of the finest in the genus, of which there are two or three distinct forms known. The pseudobulbs are oblong-ovate, narrowed to the apex, two-leaved, the leaves ligulate, the scape $1\frac{1}{2}$ to 2 feet high, arising from the base of the bulbs, and bearing an erect raceme of very handsome large flowers, of which the sepals and petals are oblong, nearly covered with large blotches of bright reddish-brown, with a bright yellow margin, and the broadly roundish obovate wavy lip is white with five small lamellae at the base. It produces its flowers during the autumn, lasting three weeks in bloom.

The *Botanical Magazine* figure represents a form with a yellow lip flushed with purple (var. *flavescens*, Hook.); that in *Xenia Orchidacea* a very large form with the sepals and petals almost wholly reddish-brown except the yellow fringe, and the lip pure white (var. *Jenischiana*, *Rchb. f.*).—*Brazil*.

FIG.—*Sertum Orch.*, t. 21; *Paxton, Mag. Bot.*, vi. p. 241, with tab.; *Bot. Mag.*, t. 3793 (*flavescens*); *Hook. First Cent. Orch. Pl.*, t. 85 (*flavescens*); *Xenia Orch.*, i. t. 54 (*Jenischiana*); *Veitch's Man. Orch. Pl.*, viii. p. 99.

M. CANDIDA GRANDIFLORA, *Hort.*—This, a very rare handsome plant, is much finer than *M. candida*, being not only much stronger in its growth, but the flowers are also larger and brighter in colour. It flowers in September, and is best grown in a pot with peat and moss.—*Brazil*.

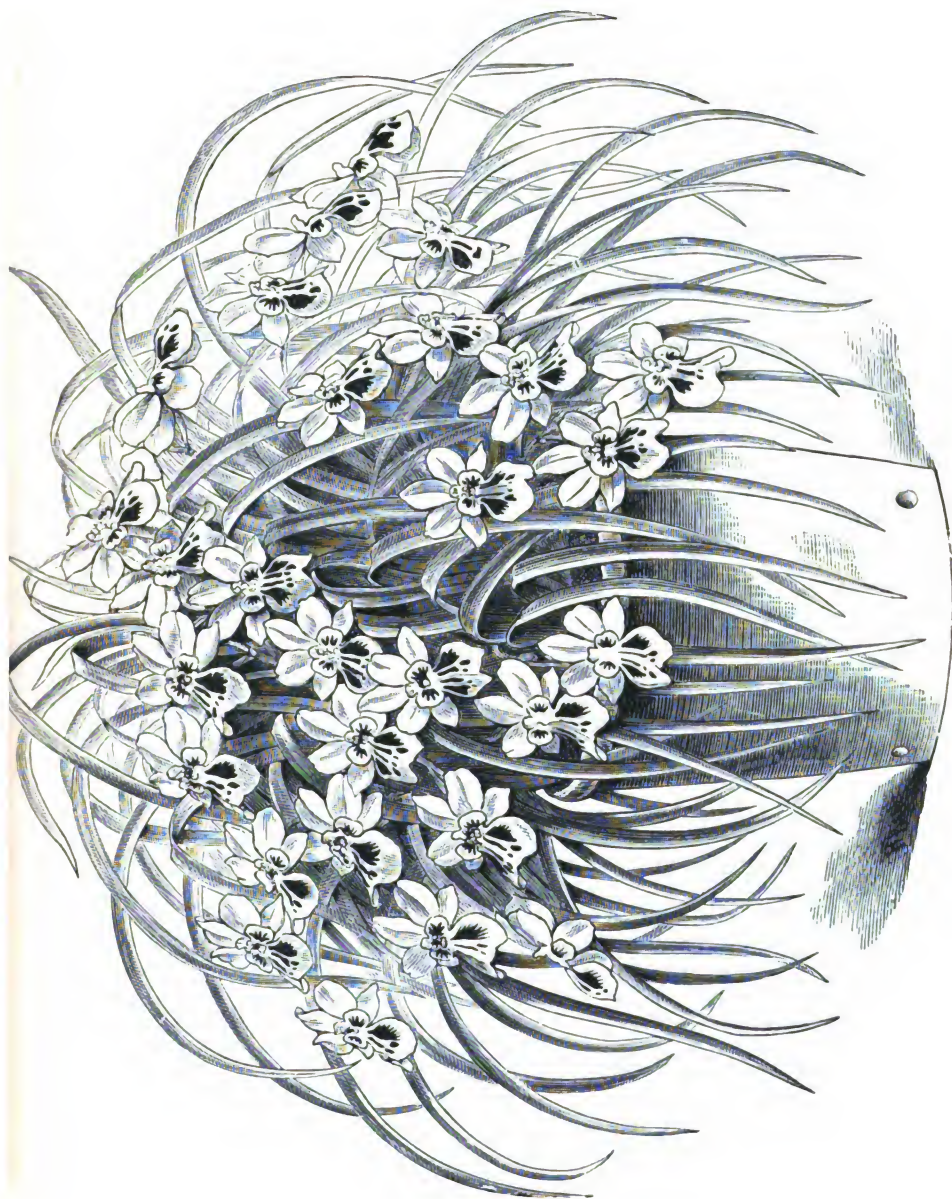
FIG.—*Orchid Album*, v. t. 200; *The Garden*, 1887, xxxi. p. 375 (woodcut).

M. CLOWESII, *Lindl.*—This showy plant produces its long racemes of flowers during September and October, and lasts a long time in perfection. Sometimes extending into November and December; the pseudobulbs are ovate, two-edged, narrowed upwards, two-leaved, the leaves narrow ligulate, yellowish, and the scape radical, bearing a rather lax raceme; the flowers have both sepals and petals yellow, cross-banded, and nearly covered with chestnut brown, and the lip, which is cordate, constricted in the middle, having its plurilamellate base of a deep violet, and its sub-rotund attenuated apex white. Of this species there are several forms, but the variety called *M. Clowesii major* is the best. It should be grown in a pot with peat and moss.—*Brazil: Organ Mountains*.

FIG.—*Bot. Mag.*, t. 4109; *Sertum Orch.*, t. 34; *Paxton, Mag. Bot.*, ix. p. 241, with tab.; *Gartenflora*, t. 160; *Hook. First Cent. Orch. Pl.*, t. 86; *Revue Hort. Belge*, 1887, p. 61 (plate).

Syn.—*Brassia Clowesii*; *Odontoglossum Clowesii*.

M. CLOWESII GIGANTEA, *O'Brien*.—A variety with shorter spikes, larger flowers, and broader segments to the flowers; sepals and petals yellow, spotted with brown; lip purple at the base, white at the extremities. It flowered in the collection of Major Mason, The Firs, Warwick, in November, 1892.



MILTONIA PHALAENOPSIS.

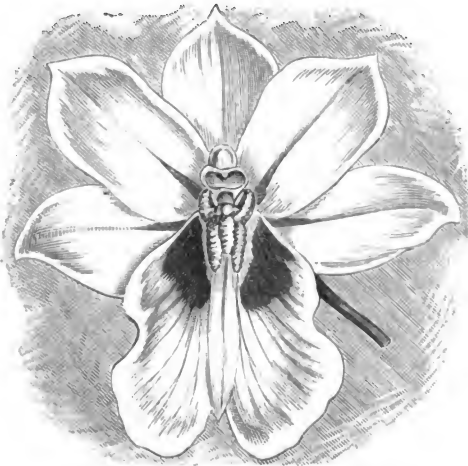
M. CUNEATA, Lindl.—A very pretty and free-growing species, which reaches about 10 inches in height, and resembles *M. candida* in its manner of growth. The pseudobulbs are ovate-oblong, compressed and narrowed at the apex, diphyllous, the leaves ligulate-oblong, keeled on the under side; the scape is radical, bearing an erect raceme of from six to eight flowers which are nearly 4 inches across; the sepals and petals are of a deep chestnut brown, tipped with pale greenish-yellow, and the lip is white, with a claw-like wedge-shaped bi-lamellate base, each keel terminating in a chocolate-coloured spot at the base of the broad roundish anterior part. These flowers are produced in February, and continue four or five weeks in perfection. The plant is best grown in a pot, in peat, with good drainage.—*Brazil*.



MILTONIA CUNEATA.

FIG.—*Bot. Reg.*, 1845, t. 8; *Moore, Ill. Orch. Pl. (Miltonia)*, t. 2; *L'Il. Hort.*, t. 237; *Orchid Album*, i. t. 46.

SYN.—*M. speciosa*; *Oncidium speciosum*.



MILTONIA ENDRESII.

M. ENDRESII, Nicholson.—

A very rare, very distinct, and very lovely plant, showing in its foliage and habit of growth a close affinity with *M. vexillaria*; the pseudobulbs are small, oblong ovate, compressed, with the edges acute, and the distichous leaves elliptic lanceolate; the flowers grow six or eight together on a slender scape, each being $2\frac{1}{2}$ inches across; they are pure white, each sepal and petal having a small bar of a lovely rose colour at the base, and the lip two larger blotches, one on each side of the crest; in form the sepals are ovate acute, the petals rather broader and blunter, and the large lip broadly panduriform and bilobed, all the parts being spread out flat; the golden crest consisting of a pubescent hippocrepiform belt,

enclosing a short inflexed horn, in front of which are three short blunt yellow keels.—*Costa Rica*: *Veragua, on the Cordillera of Chiriqui*, elevation 8,000 feet.

FIG.—*Bot. Mag.*, t. 6163; *Xenia Orch.* i. t. 81.

SYN.—*Odontoglossum Warscewiczii*, Rehb. f.

M. FESTIVA, *Rehb. f.*—A rare and showy species, resembling *M. spectabilis* in its growth and general appearance, but having very distinct flowers, which are borne in pairs, and are as large as those of *M. spectabilis* itself. They have oblong ochroleucous sepals and petals, and a large cuneately flabellate acutely pointed lip of a purplish-lilac, with eleven radiating veins of deep purple on the disk, two yellow keels, and dark purple column wings. Reichenbach suggests it may be a wild hybrid between *M. spectabilis* and *M. flavescens*.—*Brazil*.

FIG.—*Xenia Orch.*, iii. t. 232.

M. JOICEYANUM, *O'Brien*.—At one of Messrs. Protheroe & Morris's sales a plant was bought under the name of *Odontoglossum ramosissimum* by Major Joicey, of Sunningdale. When it flowered it was found to be new, and has been named and described by Mr. O'Brien as follows:—"A remarkably handsome *Miltonia*, the conformation of whose flowers leaves little doubt as to its hybrid origin. It is as showy as *M. Bluntii* and its variety, *Lubbersiana*, and a welcome addition to our garden Orchids. Its growth resembles that of a very stout *M. Clowesii*, and the inflorescence, which rises to a height of about 2 feet, bears flowers much as in that species, but the individual flowers are totally different, and bear distinct traces of *M. candida* in the broader segments and the ample labellum, which, although exhibiting the tendency to reflex on each side of the middle portion, inherited from *M. Clowesii*, also exhibit in the notched, frilled, and upturned margin, a tendency to become convolute, as in *M. candida*; the sepals are clear yellow, heavily blotched with chestnut-brown, $3\frac{1}{2}$ inches from tip to tip at their greatest expansion, and $\frac{1}{2}$ inch broad, ligulate in form; petals similar in colour, but $\frac{3}{4}$ inch broad, and more acuminate than the sepals, both sets of segments having a white base tinged with purple; the labellum is ovate, $1\frac{1}{2}$ inch broad in the front portion, the sides of the middle portion curving backward so as to give the organ a pandurate appearance; the edges of the basal part of the lip are finely toothed, the front being notched and frilled, the edge curving upwards; there are two main ridges running up the middle of the base of the lip, with two lesser and shorter ones on each side of them; in young flowers the base of the lip is purple, the other part lilac, shading off to white at the edge, but as they mature the lilac part gets an Indian-yellow tint, which is very charming; column white, tinged with purple on the wings" (*Gardeners' Chronicle*, 3rd ser., 1893, xiv. p. 206).

M. MORELIANA.—See *M. SPECTABILIS MORELIANA ROSEA*.

M. ODORATA.—See *ASPASIA LUNATA*.

M. PEETERSIANA, *Rehb. f.*—This was believed by the late Prof. Reichenbach to be a natural hybrid, between *M. spectabilis Moreliana* and *M. Clowesii*. The flowers approach those of the first-named in form, but the lip is narrower at the base and broader at the upper part; the petals and sepals are dark chestnut-brown; the lip is of a rich purple, blotched at the base with dark purple, the blotches being bordered by white; the base has five yellow keels. Named in honour of M. A. A. Peeters, of Brussels.—*Brazil*.

M. PEETERSIANA CONCOLOR, *Rehb. f.*—A variety with lighter sepals and petals, and lip without the characteristic blotches of the type.

M. PHALAEOPSIS, *Nicholson*.—A most lovely compact-habited, elegant-growing species, whose large showy flowers are in strong contrast to the slender foliage; it has oblong compressed pseudobulbs narrowed upwards, bearing each one linear acute grassy leaf 8 inches to a foot long; the flowers, which are generally two or more together on a spike, are flat and very distinct from those of any other kind; the petals are obovate obtuse, the sepals oblong-ligulate and more acute, both white; and the lip, which is panduriform, broader in front, and emarginate, is also white with two great crimson blotches, one on each side of the centre, where occurs a broken bar or two of the same colour, the front edge of the blotches being extended into stripes. The plant blooms in summer, and will last in bloom four or five weeks. This is a free plant to cultivate, but it requires the heat of the *Cattleya* house in winter to grow it well; it also requires a well-drained pot, and good fibrous peat soil.—*New Grenada*.



MILTONIA PHALAEOPSIS.

FIG.—*Pescatorea*, t. 44; *Warner, Sel. Orch. Pl.*, i. t. 30; *Batem. Mon. Odont.*, t. 3; *Gard. Chron.*, 1872, p. 832, f. 191 (specimen plant); *Lindenia*, vii. t. 334; *Gard. Chron.* N.S. 1886, xxv. p. 364, f. 69; *Vitch's Man. Orch. Pl.*, viii. p. 103.

SYN.—*Miltonia pulchella*; *Odontoglossum Phalaenopsis*.

M. PINELLII.—See *M. ANCEPS*.

M. PULCHELLA.—See *M. PHALAEOPSIS*.

M. PURPUREA VIOLACEA.—See *M. SPECTABILIS MORELIANA ROSEA*.

M. REGNELLI, *Rehb. f.*—A very distinct and pretty species, which grows in the way of *M. cuneata*. The pseudobulbs are ancipitous narrow oblong, tapering to the apex, the leaves linear ligulate, light green, and about 12 inches long, and the scapes erect from the axils of accessory leaves, and producing from three to six flowers, which are about 2½ inches across, the lanceolate sepals and the oblong petals white, and the sub-pandurate lip cuneate at the base, quadrate and emarginate in front, and of a pale rosy-pink streaked with darker rose in the centre, white at the edge and along the median line; there are three lamellae at the base of the lip, the middle one shorter than the others. The plant generally produces its blossoms in September or October, and lasts in bloom for some four or five weeks. It is best grown in a pot, with peat and moss.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5436; *Batem. Second Cent. Orch. Pl.*, t. 182; *Xenia Orch.*, i. t. 47; *Puydt, Les Orch.*, t. 26.

M. REGNELLI PURPUREA, *Hort.*—This is a most charming form of *M. Regnelli*, and very rare. The habit of growth is the same in both, but in the form here referred to the spike is longer, and the flowers are larger, and

altogether superior in colour; the sepals and petals are delicate rose, margined with white, and the broad flat emarginate lip is of an intense magenta-crimson, the three crests being white, and accompanied by several small pinkish stripes.

—Brazil.



MILTONIA REGNELLII
PURPUREA.

FIG.—*Orchid Album*, ii. t. 72; *Floral Mag.*, t. 490; *L'Orchidophile*, 1889, p. 113; *Revue Hort. Belge*, 1891, p. 253, t. 21.

M. ROEZLII, *Nicholson*.—One of the most beautiful of all the *Miltonias*, producing blossoms twice a year; it is a very near ally and a close rival of *M. veillaria*, and yet how different! The plant has small narrow ovate acutely margined pseudobulbs, long linear-lanceolate light green leaves, and large flat sweet-scented flowers from 2 to 3 inches in diameter, and borne one to four on a scape; the obovate oblong acute sepals are pure white, and the broader petals are white with a bold purple spot at

the base; the lip is obcordate, $2\frac{1}{4}$ inches in breadth, white with a yellowish stain, tinged with red around the crest. The flowers, which are deliciously sweet-scented, last from four to five weeks in perfection if kept free from damp. There are numerous varieties of this charming species, many of which make fine subjects as exhibition plants; some of them are much lighter than the one here described, but they are all worth cultivating. It is best grown in the *Cattleya* house, and requires an abundance of moisture. It is named in honour of the late M. Roezl, being one of his own introductions.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 183; *Bot. Mag.*, t. 6085; *Batem. Mon. Odont.*, t. 30; *Floral Mag.*, 2nd ser., t. 90; *Orchid Album*, ii. t. 64; *Gard. Chron.*, 1873, p. 1302, f. 269; *Lindensia*, ii. t. 78; *Reichenbachia*, ii. t. 69; *Revue Hort. Belge*, 1891, p. 132, t. 12.

SYN.—*Odontoglossum Roezlii*.

M. ROEZLII ALBA, *Bull.*—A charming variety of the last-named species, the flowers of which are pure white with the exception of a blotch of pale lemon-yellow on the basal part or disk of the lip. This very desirable variety lasts a long time in perfection, and requires the same treatment as *O. Roezlii*.—*New Grenada*.

FIG.—*Floral Mag.*, 2nd ser., t. 164; *Veitch's Man. Orch. Pl.*, viii. p. 105.

M. ROSEA.—See *M. SPECTABILIS ROSEA*.

M. SPECIOSA.—See *M. CUNEATA*.

M. SPECTABILIS, *Lindl.*—A beautiful and well-known popular Orchid, which grows about 6 inches high, and produces its large solitary showy flowers in July and August, lasting six weeks in beauty if kept in a cool house and free from damp. The pseudobulbs are oval, ancipitous, and covered by a pair of ligulate leaves, of a pale greenish-yellow colour, and the one-flowered scapes are clothed with large fuscous keeled bracts; the handsome flowers have the spreading oblong sepals and the recurved petals all white, while the obovate plicate lip, which is large, measuring 2 inches across, is of a deep violet-purple at the base and along the deep furrows, the middle portion being of a fine deep rosy-crimson, and the rest of the surface more or less flushed with pink; the



MILTONIA ROEZLII.
(From the *Journal of Horticulture*.)

column has two conspicuous purple ears or wings, and the disk bears three lamellae. Of this beautiful species there are some varieties much better than others. It is a most desirable old plant, and easily grown into a good specimen, especially when cultivated in a basket.—*Brazil: Sao Paulo.*

FIG.—*Bot. Mag.*, t. 4204; *Bot. Reg.*, t. 1992; *L'Ill. Hort.*, t. 216; *Lem. Jard. Fl.*, t. 108; *Parson, Mag. Bot.*, vii. p. 97, with tab.; *Hort. Parad.*, i. t. 11; *Knowles & Wente. Floral Cub.*, t. 45; *The Garden*, 1887, xxxi. p. 374, t. 593; *Revue Hort. Belge*, 1889, p. 25, t. 3; *Veitch's Man. Orch. Pl.*, viii. p. 109; *Orchid Album*, xi. t. 491.

SYN.—*Macrochilus Eryanus*.

M. SPECTABILIS ASPERSA, *Rehb. f.*—A variety which appeared in the collection of the late Major Lendy, Sunbury. The sepals and petals are said to be "cream-coloured partly washed with white mauve-lilac"; lip light mauve-lilac.

M. SPECTABILIS LINEATA, *Lind. et Rod.*—A lovely and distinct variety, having white sepals and petals. Lip white in the anterior part, purple-rose at the base, with seven or eight carmine-rose veins reaching nearly to the anterior margin.

FIG.—*Lindenia*, ii. t. 62.

M. SPECTABILIS MORELIANA.—A very handsome and most desirable plant, the flowers of which resemble those of *M. spectabilis* in every particular except colour, as does also the habit of growth, thus confirming the view now generally held that it is merely a highly-coloured and superior variety of that species. The colour of the sepals and petals is of a deep rich purple, and the broad flat lip is beautifully veined with rose. It produces its flowers in September and October, continuing in bloom a long time.—*Brazil: Rio Janeiro.*

FIG.—*Lindenia*, iii. t. 105; *The Garden*, 1887, xxxi. p. 374, t. 593; *Revue Hort. Belge*, 1887, p. 229 (plate); *Orchid Album*, viii. t. 364.

The following are sub-varieties of this handsome form:—

M. SPECTABILIS MORELIANA ATRO-RUBENS, *Hort.*—A magnificent variety, with the flowers very large, often measuring 4 inches across, and much darker in colour than those of *M. spectabilis Moreliana*; it blooms in September, and lasts a considerable time in beauty. A scarce plant.—*Brazil.*

M. SPECTABILIS MORELIANA ROSEA, *Rehb. f.*—A distinct form of this old favourite, in which the sepals and petals are white, traversed by a band of pale rose down the centre, and the lip is bright rose, distinctly veined with rosy purple; it flowers during the summer months.—*Brazil.*

FIG.—*Gard. Mag. Bot.*, iii. p. 41, with tab.; *Warner, Sel. Orch. Pl.*, i. t. 32; *Jennings, Orch.*, t. 37; *Floral Mag.*, 2nd ser., t. 143; *Puydt, Les Orch.*, t. 27; *Bot. Mag.*, t. 4425; *Moore, Ill. Orch. Pl. (Miltonia)*, t. 1; *Flore des Serres*, t. 1008.

SYN.—*M. Moreliana*; *M. purpurea violacea*.

M. SPECTABILIS RADIANS, *Rehb. f.*—In this form of *M. spectabilis* we have a most chaste-looking and lovely epiphyte, and a most admirable contrast to the highly-coloured *M. spectabilis Moreliana*. The habit is that of the type, the pseudobulbs being oblong and compressed, the leaves lorate or ligulate and keeled, and the scape ancipitous, springing from the base of the bulb. The

flowers are about 3 inches across and over 4 inches in depth, the sepals and petals being of a creamy white, and the lip pandurately-obovate retuse and slightly wavy, pure white, with a crest of three yellow linear lamellae blunt and thickened in front, and close upon these a series of about six club-shaped slightly curved bars $\frac{3}{4}$ inch long of magenta-purple radiating from the base, two thin purple lines running back through the crest. The white column is bordered with magenta.—*Brazil*.

FIG.—*Orchid Album*, iv. t. 164.

M. SPECTABILIS ROSEA, *Hort.*—This very handsome and rare plant resembles *M. spectabilis* in its habit of growth, but the pseudobulbs are narrower and longer, as also are the leaves. The flowers, which are large, have the sepals and petals white tinted with light rose, and the lip white irregularly striped with rich deep rosy lake in broad unequal bands with a few detached blotches. It flowers during summer, and remains in perfection for several weeks.—*Brazil*.

FIG.—*L'Ill. Hort.*, t. 524.

SYN.—*M. rosea* : *M. Warneri*.

M. VEXILLARIA, *Bentham*.—This magnificent Orchid ranks among the most beautiful of all Orchids. It has been known for about thirty years, but it is only after numerous futile efforts, it has been imported in a living state. It now proves to be a most valuable addition to the genus on account of the large size and distinct colour of its flowers, which measure as much as 4 inches in depth and 3 inches across. The plant has small narrow oblong compressed pseudobulbs, and light green elliptic-lanceolate acuminate leaves 8 to 10 inches long and 1 inch broad; the slender scapes are produced from the sides of the bulbs, and bear from five to seven flowers each, the sepals and petals being oblong obtuse, of a bright rosy pink, and the large orbicular two-lobed lip of the same colour. There are many varieties of this charming species, some much lighter than others, varying from pure white to deep shades of rosy purple. We find this plant succeeds best in the *Cattleya* house during the winter months and up to the time of flowering, after which it should be placed in the *Odontoglossum* house; it delights in an abundant supply of moisture during the growing period. This is a plant that should be in every collection as it is one of the most useful free flowering Orchids. There are two forms, one producing its flowers in spring, and the other with smaller flowers blooms in autumn.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 182; *Jennings, Orch.*, t. 36; *Bot. Mag.*, t. 6037; *Batem. Mon. Odont.*, t. 29; *Floral Mag.*, 2nd ser., t. 73; *Id.*, t. 461 (*rubrum*); *L'Ill. Hort.*, 3rd ser., t. 113; *Flore des Serres*, t. 2058; *Warner, Sel. Orch. Pl.*, ii. t. 38; *Gard. Chron.*, 1872, p. 667, f. 163; *Id.*, 1873, p. 644, f. 123; *Id.*, n.s., 1886, xxvii. p. 145, f. 27; *Orchid Growers' Manual*, 5th ed. (frontispiece); *Reichenbachia*, 2nd ser., i. t. 29; *Vitch's Man. Orch. Pl.*, viii. p. 112.

SYN.—*Odontoglossum vexillarium*, Rehb. f.

M. VEXILLARIA ALBA, *Finet*.—A very beautiful and distinct variety, with white flowers having only the faintest tinge of rose towards the lower portions of the sepals and petals. This was first flowered by M. Finet, of Argenteuil, France, an ardent admirer of Orchids.—*New Grenada*.

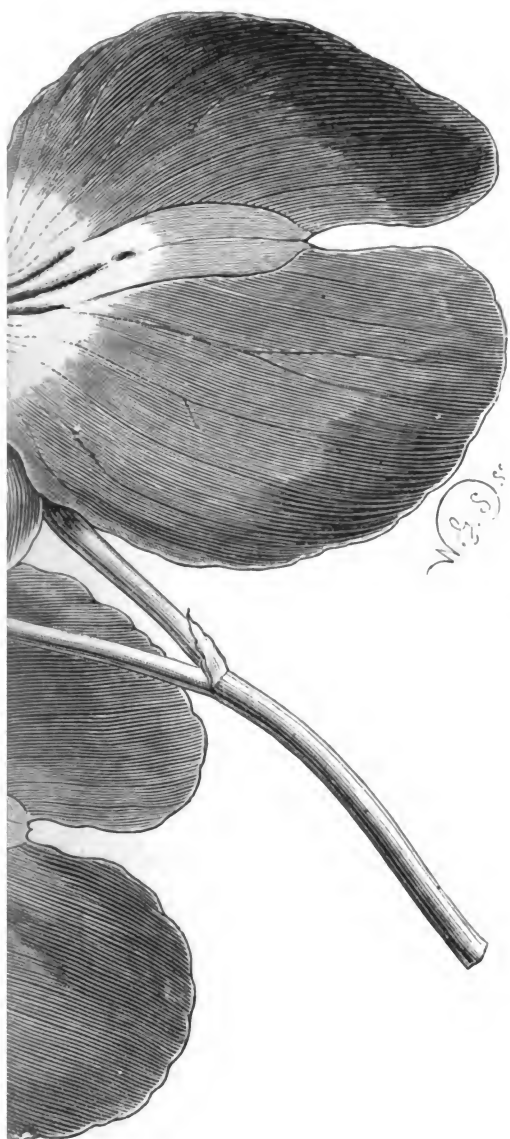
FIG.—*Orchid Album*, v. t. 227; *Lindenia*, viii. t. 354.

SYN.—*M. vexillaria virginialis*.



MILTONIA VEXILLARIA.





V. S. S.

MILTONIA VEXILLARIA.
(From the *Gardener's Chronicle*.)

M. VEXILLARIA COBBIANA.—See *M. VEXILLARIA LEUCOGLOSSA*.

M. VEXILLARIA HILLIANA, *Hort.*—A variety named in honour of C. J. Hill, Esq., Arnot Hill, Nottingham. The sepals and petals are rose-coloured; the base of the lip yellow with three dark purple lines, and two purple lines on the equal sepals. The lip also has a rosy margin, and the area between is covered with purple spots in great number.—*New Grenada*.

SYN.—*Odontoglossum vexillarium Hillianum*, Rchb. f.

M. VEXILLARIA KIENASTIANA, *Hort.*—A very fine variety with uncommonly large flowers. The sepals and petals have broad white margins and a rose-coloured disk, and the lip is light yellow at the base with the usual three central purple lines, besides which fine radiating rose lines run all over the grand lip except along the pure white margin.—*New Grenada*.

SYN.—*Odontoglossum vexillarium Kienastianum*, Rchb. f.

M. VEXILLARIA LEOPOLDII, *Hort.*—A very distinct variety, with reflexed sepals and petals, which are of a fine rose colour; the lip is furnished with a large deep blood-red blotch at the base. [*For Illustration, see page 526.*]

FIG.—*Gard. Mag.*, 1893, p. 594 (woodcut).

M. VEXILLARIA LEUCOGLOSSA, *Hort.*—This is a very striking variety, having the sepals and petals pale rose-coloured, with a pure white lip. It was first flowered by C. J. Hill, Esq., of Nottingham.—*New Grenada*.

SYN.—*M. vexillaria Cobbiana*; *Odontoglossum vexillarium leucoglossum*, Rchb. f.

M. VEXILLARIA MEASURESIANA, *Hort.*—A variety of extreme beauty, having flowers which are wholly white on the exterior as well as the interior surface. The flowers are somewhat smaller than in the variety *alba*, but it is the purest white form we have yet seen.—*New Grenada*.

M. VEXILLARIA ROSEA, *Hort.*—A superior variety of *M. vexillaria*, in which the flowers are of a deeper rose colour than usual.—*New Grenada*.

FIG.—*Orchid Album*, viii. t. 348.

M. VEXILLARIA RUBELLA, *Bull.*—This is said to be an autumn-flowering form of the type. The flowers are medium sized, and of a very pleasing tint of rose colour. The pseudobulbs, moreover, instead of being elongated, are blunt and roundish, and the foliage is shorter and broader than in the typical form.—*New Grenada*.

M. VEXILLARIA SPLENDENS, *Williams.*—An exceedingly handsome dark-coloured variety, with flowers from 4 to 4½ inches in diameter, of an intense rose colour; the two lateral sepals have at their base a crimson stripe about ¾ inch long; the lip is furnished with three short radiating stripes just below the calli. The colouring of the lip and segments of this flower is carried to the margins, and is not softened off as in many of the varieties.—*New Grenada*.

M. VEXILLARIA SUPERBA, *Hort.*—This is the most distinct variety we have yet seen, and although the flowers are but of medium diameter, the colour

is intensely brilliant, more than compensating for lack of size. The sepals and petals are rose colour, the sepals having a short purplish-crimson longitudinal stripe at their base; the lip is bright magenta-rose, and in the white area at the base is a large triangular dark crimson-purple blotch veined with radiating



MILTONIA VEXILLARIA LEOPOLDII.
(From the *Gardeners' Magazine*.)

lines of a darker tint, the three front lines running out into three club-shaped bars, a distinct white space separating the rose colour from the crimson. It flowers during the autumn months. This fine form was first flowered by Sir Trevor Lawrence, Bart., Dorking.—*New Grenada*.

FIG.—*Orchid Album*, iv. t. 171; *Lindenia*, v. p. 201.

SYN.—*Odontoglossum vexillarium superbum*, Rehb. f.



MILTONIA WARSCEWICZII WELTONI.

(From the *Journal of Horticulture*.)

M. VEXILLARIA VIRGINALIS.—See *M. VEXILLARIA ALBA*.

M. WARNERI.—See *M. SPECTABILIS ROSEA*.

M. WARSCEWICZII, *Rehb. f.*—A very distinct and handsome plant, which has borne in gardens several names, including *Oncidium fuscatum*, but which our chief authorities now place under *Miltonia*. It has tall flattened narrow oblong pseudobulbs, oblong obtuse pale green leaves, and nodding panicles of numerous crowded flowers, whose peduncle springs from the axil of an accessory leaf sheathing the bulb; the short sepals and petals are bluntly cuneate ligulate and prettily undulated, dark brownish-purple tipped with white, and the sessile lip is nearly orbicular, deeply bilobed, of a velvety brownish-purple margined with rosy-lilac, giving a roundish outline to the purple area, in the midst of which there is a transversely oblong shining patch, which from being glossy appears to be of a different colour; there is also a yellow spot on the disk; the column is very short, purple at the base. It blooms in the spring months.—*Peru; New Grenada*.

FIG.—*Bot. Mag.*, t. 5843; *Flora des Serres*, t. 1831; *Orchid Album*, v. t. 216; *Lindenia*, viii. t. 384; *Veitch's Man. Orch. Pl.*, viii. p. 115.

SYN.—*Oncidium fuscatum*.

M. WARSCEWICZII WELTONI, *Moore*.—A variety of *M. Warscewiczii*, which, though differing in many points, is obviously of the same specific type; in its flat oblong pseudobulbs, oblong leaves, and paniculate inflorescence, it is quite like the type, but the flowers appear to be smaller, and the sepals and petals have the ground colour olive-brown, with the tips yellow instead of white; the lip is smaller, roundish-ovate, bilobed, but without an apiculus; the purple colour is cut off straight at about two-thirds the length of the lip, and the apical part is distinctly white; there are many connecting links known to botanists, and this has led to the two plants being regarded as strictly synonymous.—*Peru; New Grenada*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 156.

SYN.—*Oncidium Weltoni*.

M. WARSCEWICZII XANTHINA, *Rehb. f.*—A pleasing variety, in which the flowers are almost wholly yellow; the sepals and petals are yellow, and the lip is of a light yellow with a narrow white border, there being no purple as in the type. It blooms in the winter season, and first flowered with W. Lee, Esq., Downside, Leatherhead.—*Peru*.

MONOCHILUS, Wallich.

(Tribe Neottieae, subtribe Spirantheae.)

A small genus of terrestrial tropical Orchids, included by Bentham under *Zeuxine*, but kept distinct both by Lindley and Reichenbach. It differs from *Anoetochilus* in the absence of a spur, and in the adhesion of the lip with the column, and from *Zeuxine* in its long membranous split

lip. It contains a few species only, which are natives of India and Ceylon.

Culture.—It requires the general treatment of *Anoetochilus*, and is a free-growing plant, which may be cultivated in a warm house without the assistance of a bell-glass.

M. REGIUM, *Lindl.*—A distinct species, growing about 5 inches high, and having ovate-lanceolate leaves 3 inches long, with a margin of a dark green colour, and a broad band of pale lilac or whitish down the centre; the flowers are white and green in loose spikes, and the lip is split into a pair of roundish crenate lobes. Its native name is "Iri Rajah," or Striped King of the Woods.—*Ceylon and Borneo*.

FIG.—*Blume, Orch. Arch. Ind.*, t. 48.

SYN.—*Anoetochilus striatus* : *A. lineatus* ; *Haplochilus regium*.

MOOREA, Rolfe.

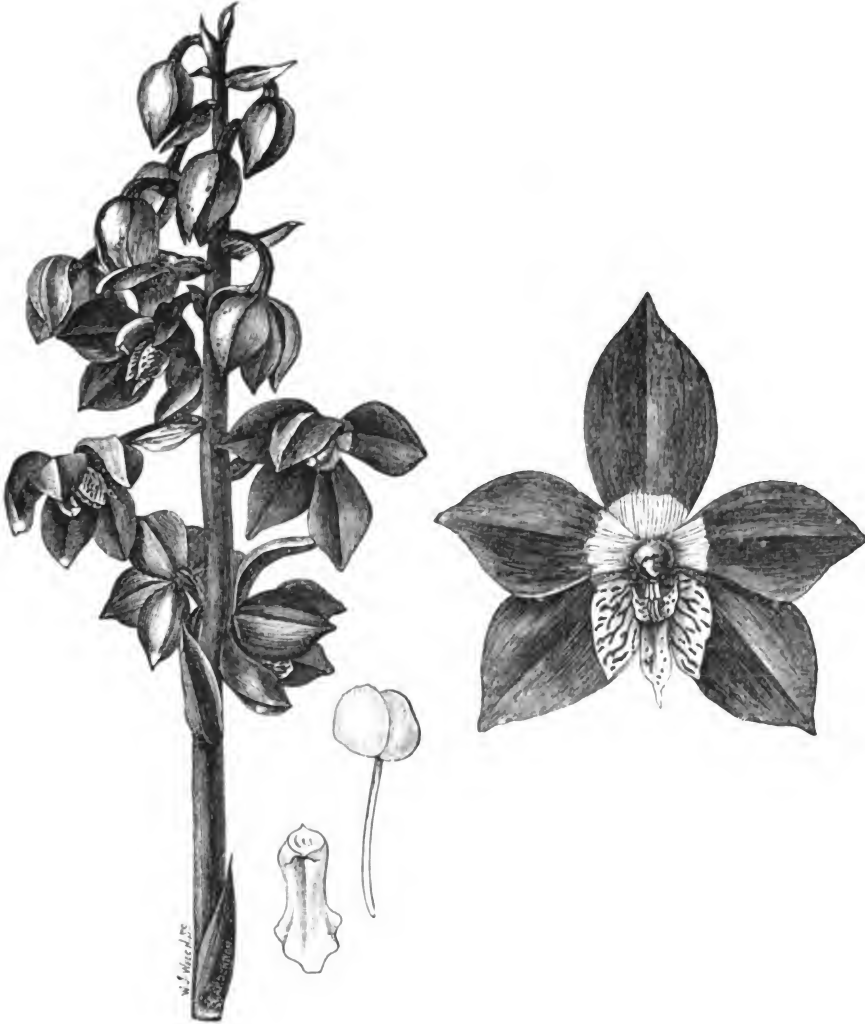
(Tribe Vandeeae, subtribe Stanhopieae.)

A small genus at present, indeed it is the only species known. It has been dedicated to Mr. F. W. Moore, the most indefatigable and painstaking Curator of the Botanic Gardens at Glasnevin, Dublin, who can give no account of its origin, having received it with a number of imported Orchids. It would appear to come near the genus *Hculetia*, from which it differs however in the lip being destitute of a claw, and jointed with the base of the column, but the epichil is not jointed to the hypochil. It has oblong-ovoid pseudobulbs, having a pair of leaves which are lanceolate, acuminate, and plaited, some 2 feet long. It has an erect spike, bearing many flowers, which are some 2 inches across, the sepals and petals spreading, lip very deeply three-lobed. Column somewhat clavate, wingless.

Culture.—Same as *Lycaste*, which see.

M. IRRORATA, *Rolfe*.—This distinct new Orchid was first flowered by Mr. F. W. Moore, Curator of the Glasnevin Botanic Gardens, Dublin, and the new genus which has been created for it has been dedicated by Mr. Rolfe to him, who thus describes the species in the *Gardeners' Chronicle*, July 5th, 1890:—"Pseudobulbs ovoid-oblong, $4\frac{1}{2}$ inches long; leaves petiolate plicate lanceolate shortly acuminate, $1\frac{1}{2}$ to 2 feet long, $4\frac{1}{2}$ inches broad; flowers 2 inches in diameter, pedicels $1\frac{1}{2}$ to 2 inches long; sepals 6 to 7 lines diameter, reddish-brown with nearly white base, the lateral ones connate, petals similar but a shade narrower;

lip straw yellow, shining, radiately lined with dark blackish-purple; front lobe with a strong transverse bar near the apex, narrow, acute, 7 lines long; side lobes a little shorter 4 lines broad, a little villose at the base, crest and base of



MOOREA IRRORATA.

(From the *Gardeners' Chronicle*.)

front lobe a little brighter yellow with numerous minute dusky spots; column cream-white.—*Tropical America*.

FIG.—*Bot. Mag.*, t. 7262; *Gard. Chron.*, 3rd ser., 1892, xi. p. 489, f. 73.

MORMODES, *Lindley*.*(Tribe Vandeeae, subtribe Stanhopieae.)*

A most interesting genus, of which only a few of the species find favour with Orchid cultivators. They are related closely to *Catasetum*, but differ in the sepals being usually narrow and more spreading, and the lip narrowed below into a claw, incurved, ascendent, and obliquely twisted. They are epiphytes, with short oblong or fusiform stems, sheathed by the membranaceous bases of the old leaves, of which three or four lance-shaped plicated ones are produced at the top; the scapes issue from some of the nodes of the stems. They are found in Peru, U. S. of Colombia, Central America, and Mexico, upwards of a dozen species being described.

Culture.—These plants are of deciduous habit, and do best in the *Cuttleya* house, potted in peat, with a liberal quantity of water supplied to the roots during their period of growth, after which water should be gradually withheld until they become quite dry, when they may be placed near the glass till they begin to grow. They are propagated by division.

M. BUCCINATOR, *Lindl.*—A very curious distinct species, which Reichenbach describes as “the most polychromatic Orchid of the world.” The form originally described by Lindley had the flowers pale green, “with an ivory-white lip, whose sides are so rolled back as to give it the appearance of a trumpet.” Other forms have pale yellow flowers, densely spotted with crimson, and a greenish-yellow lip, also spotted with crimson, the markings on the sepals much smaller than those on the petals. This species well represents the contortion of the parts of the flower peculiar to this genus, the column being twisted sometimes to the right, sometimes to the left. It flowers in the autumn months.—*Mexico*.

M. BUCCINATOR MAJUS, *Rehb. f.*—A variety which has larger ochre-coloured flowers with numerous small cinnamon-coloured dots on the sepals and petals, the lip bearing only a few obscure pallid markings on the sides.—*New Grenada*.

M. CALANTHUM.—See *M. COLOSSUS*.

M. CARTONII, *Hook.*—A variable plant allied to *M. igneum*, which it much resembles in habit. Flowers yellow, sometimes spotted, at others barred or striped with red. It is named in honour of Mr. Carton, formerly gardener to the Duke of Northumberland, at Syon House, who first flowered it.—*U. S. of Colombia*.

FIG.—*Bot. Mag.*, t. 4214; *Gard. Chron.*, 1871, p. 447, ff. 87, 88; *Paxton, Fl. Gard.* iii. t. 95.

M. CITRINUM.—See *M. PARDINUM UNICOLOR*.

X **M. COLOSSUS**, *Rchb. f.*—A very effective species of large growth, the stems sub-terete, tapering upwards, sometimes a foot long, with elliptic ovate plaited leaves, and a stout radical scape a foot long, bearing a raceme a foot long of large spreading flowers, 5 to 6 inches across, with narrow lanceolate acuminate sepals and petals, of which the lower part is pink with darker pink veins, and the upper half yellow; the lip is bright yellow dotted with pink at the base, much incurved, with the edges revolute, meeting at the back, and the green arching column is twisted to one side as usual. It is a most singular and wonderful plant.—*Central America*, elevation 7,000 feet.

FIG.—*Bot. Mag.*, t. 5840.

SYN.—*M. macranthum*; *M. calanthum*.

M. GREENII.—See *M. UNCIA*.

M. IGNEUM, *Lindl.*—A very old and handsome species with fusiform pseudobulbs, and long ovate lanceolate deep green leaves, producing fleshy flowers, with chocolate-brown sepals and petals, and a rich orange-coloured lip forming a sort of hood.—*Central America*.

FIG.—*Parton, Fl. Gard.*, iii. t. 95; *Lem. Jard. Fl.*, iv. t. 330.

M. IGNEUM MACULATUM, *Rolfe.*—The flowers of this variety leave those of the type far behind as regards beauty of form and colouring. The sepals and petals are yellowish-brown, covered with dark purple-brown regular spots; the lip is red spotted somewhat irregularly with dark brown; column white covered with small purple spots.—*Peru*.

FIG.—*Lindenia*, viii. t. 364.

M. LAWRENCEANUM, *Rolfe.*—A handsome species, dedicated to Sir Trevor Lawrence, Bart. The pseudobulbs are pyriform, leaves ovate-lanceolate, acuminate; racemes many-flowered; sepals and petals lanceolate-acute, dark orange-yellow, striped longitudinally with dark brown on the interior surface, on the exterior surface the lines are represented by dots only; lip yellow, covered by purple-brown spots; column white spotted with purple.—*U. S. of Colombia*.

FIG.—*Lindenia*, vi. t. 273.

M. LUXATUM, *Lindl.*—A very handsome species, and also a very singular one, in which the distortion of the flower peculiar to the genus seems carried to its extreme limit, the whole flower—not only the lip and column, which are the parts usually affected—appearing as if all its members had been dislocated. Notwithstanding this it is a plant of much beauty. The stems are short, terete, and tapered upwards, the plicate lanceolate leaves 3 feet long, and the flowers on radical scapes in oblong racemes much shorter than the leaves, very fragrant, 3 inches or more in diameter, lemon-yellow, fleshy, and rather globular, but so distorted that the parts are not easily recognised, excepting

that the lip has a deep brown streak down the middle, and covers the column like a hood. It blooms in July, lasting in bloom a couple of weeks or more.—*Mexico*.

FIG.—*Bot. Reg.*, 1843, t. 33; *Moore, Ill. Orch. Pl., Mormodes*, t. 3; *Revue Hort. Belge*, 1889, p. 132 (plate).

M. LUXATUM EBURNEUM, *Rchb. f.*—A very handsome variety, with large sweet-scented creamy-white flowers, as many as twelve to fifteen being produced on a spike. This is a plant that should be in every collection, it being a general favourite. It flowers in July and August.—*Mexico*.

SYN.—*M. Williamsii*.

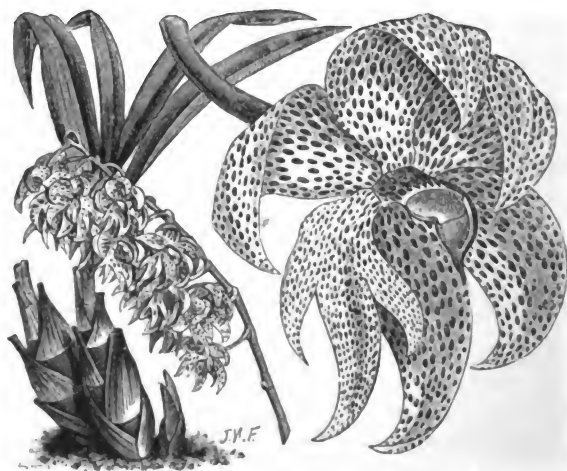
M. LUXATUM PUNCTATUM, *Rchb. f.*—A distinct and beautiful variety, the flowers of which are white, densely spotted with red on the inner sides of the sepals and petals.—*Mexico*.

M. MACRANTHUM.—See *M. COLOSSUS*.

M. OCANAE, *Lind. et Rchb. f.*—This old species was discovered by Schlim in the Province of Ocaña, U. S. of Colombia, at 4—5,000 feet elevation. The racemes are six- to ten-flowered; flowers about 2 inches in diameter, of a dark orange, densely speckled and spotted with reddish-brown.—*Ocaña, U. S. of Colombia*.

FIG.—*Gard. Chron.*, N.S., 1879, xii. p. 816, f. 133, p. 817, f. 134; *Bot. Mag.*, t. 6496.

M. PARDINUM, *Bateman*.—This very beautiful species is unfortunately seldom seen in collections. The stems are terete and tapering, 3 to 6 inches high, with several lanceolate membranaceous leaves from their upper end, and from their base the nodding flower scapes a foot or more in length, furnished



MORMODES PARDINUM.

with a crowded raceme; the sepals and petals are ovate-lanceolate acuminate, spreading at the base, but with their points all directed upwards so as to be almost connivent; they, as well as the three-lobed lip, are bright yellow, spotted

with rich brownish-crimson, so that the flowers have quite a gay appearance.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3900; *Batem. Orch. Mex. et Guat.*, t. 14; *Knowles & Westc. Floral Cab.*, t. 113; *Orchid Album*, vii. t. 330.

SYN.—*Cyclosia maculata*.

M. PARDINUM CITRINUM, *Hort.*—See *M. PARDINUM UNICOLOR*.

M. PARDINUM MELANOPS, *Rchb. f.*—A variety with "flowers of such a dark brownish-purple tinge that they looked almost black." It appeared in the collection of M. Kienast-Zolly, of Zurich.

M. PARDINUM UNICOLOR, *Hooker*.—This variety differs from the type only in having the flowers wholly of a clear lemon-yellow without any trace of spotting, and is by so much the less ornamental of the two, though its self-coloured flowers are not ineffective.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3879; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 181, f. 34.

SYN.—*M. pardinum citrinum*; *M. citrinum*; *Cutasetum citrinum*.

M. PUNCTATUM, *Rolfe*.—An attractive plant which appeared in the collection of M. Gustave Bral, of Mont St. Amand, Ghent, Belgium. "Sepals light yellowish-brown, densely speckled with very dark brown, $1\frac{1}{2}$ inch long by 4 lines broad; petals 6 lines broad, otherwise like sepals; lip stalked, blade triangular, shortly and abruptly acuminate; sides reflexed or nearly revolute, lateral angles rounded; colour yellow, with numerous small chestnut spots; column pale yellowish-white, densely and minutely spotted with light purple" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1891, x. p. 696).

M. ROLFEANUM, *L. Linden*.—A new and distinct species with large and handsome flowers. The sepals and petals are pale green, tinted with brown and relieved by dark green stripes; the lip is fleshy, brownish-crimson on the anterior surface, greenish-yellow on the lower side, striped with green; the column is crimson posteriorly, white in front. Strongly scented. Dedicated to Mr. R. A. Rolfe, Assistant, Herbarium, Kew.—*Peru*.

FIG.—*Lindenia*, vii. t. 289; *Gard. Chron.*, 3rd ser., 1892, xi. p. 203, f. 30.

M. UNCIA, *Rchb. f.*—The handsomest and most noble of all the *Mormodes*, distinguished by its broadly fusiform somewhat two-edged stems or pseudobulbs, about 3 inches high, its elongate lanceolate ribbed leaves 1 to $1\frac{1}{2}$ foot long, and its many-flowered pendulous raceme of large flowers, which are $2\frac{1}{2}$ inches in diameter, whitish externally, and within of a pale yellow, entirely covered with oblong dark crimson spots rather smaller and more dot-like near the margin; the sepals and petals are concave, an inch across, ovate-acute, and the lip is curved upwards with a linear fleshy base dilated gradually into a saccate orbicular apex, the base dark purple, the inner surface yellow spotted with red, the exterior spotted like the sepals except at the tip, which is lilac. The flowers have an aromatic odour.

FIG.—*Bot. Mag.*, t. 5892.

SYN.—*M. Greenii*.

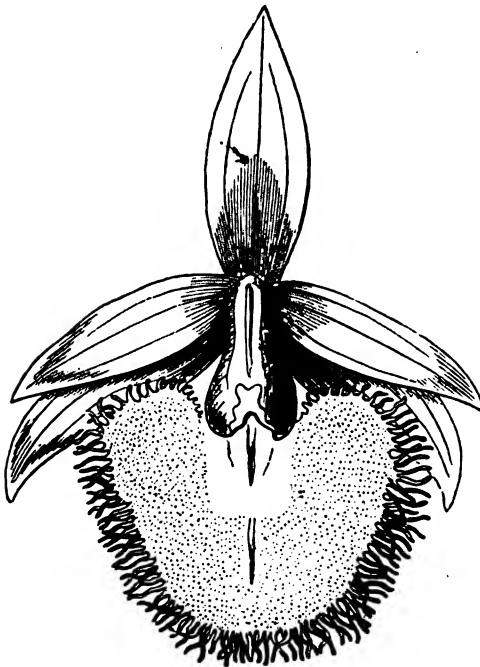
M. WILLIAMSII.—See *M. LUXATUM EBURNEUM*.

NANODES, Lindley.

(Tribe Epidendreae, subtribe Laelieae.)

A very small epiphytal genus of peculiar interest, with a ringent perianth, and a fleshy undivided lip connate with the column. Bentham associates it with *Epidendrum* under the section *Nanae*, distinguished like it by distichous sheathing leaves on a dwarf diffuse-growing stem. *N. Medusae* is a most extraordinary-looking object when in flower, very distinct from any other of its order.

Culture.—The little Orchid described below is a plant well worth cultivating, and requires to be grown on a block, or in a basket, with moss and peat, and kept very cool in the *Odontoglossum* house, where it should be suspended from the roof, as it is a native of the higher Andes of Western S. America.



NANODES MEDUSAE.

(From the *Gardeners' Chronicle*.)**N. MEDUSAE, Rehb. f.—**

One of the most singular of Orchids. The stems are densely tufted, pendent, branched, covered with broad imbricated sheaths of the distichous glaucous green leaves, which are 3 to 4 inches long, linear-oblong, curved, unequally bilobed at the apex, and semi-amplexicaul at the base; the flowers are leathery, 2½ inches across, flat, two or more in the axils of the terminal leaves; the sepals and petals linear-oblong, yellowish-green tinged with brown, and the lip very large, orbicular with a cordate base, and a bilobed apex, of a deep maroon-purple, greenish over the disk, the whole margin deeply cut into subulate segments, forming a conspicuous fringe; the plant has no pseudobulbs to support it, but only a woody stem crowded

with greyish-green leaves in two ranks whose sheathing bracts entirely hide the stem itself. Of this plant Sir Joseph Hooker remarks, that, "altogether the flattened stout

culms, and the pale glaucous colour of the foliage, and the extraordinary appearance and lurid purple of the flower, give it a most sinister appearance, and for an Orchid a most unusual one."—*Ecuador*.

FIG.—*Gard. Chron.*, 1867, p. 432 (woodcut); *Bot. Mag.*, t. 5723: *Flore des Serres*, t. 1771; *Lindenia*, iv. t. 147; *Veitch's Man. Orch. Pl.*, vi. p. 130; *Journ. of Hort.*, 1890, xxi. p. 51, f. 9.

SYN.—*Epidendrum Medusar*.

NASONIA, Lindley.

(Tribe Vandeeae, subtribe Pachyphyllaeae.)

A genus of small-growing Peruvian plants, having usually very bright-coloured flowers; we have introduced here one species only, which we are told was originally discovered by Hartweg many years ago, when travelling for the Horticultural Society of London. It is a dwarf plant, with stem-like growth, and for its size the flowers are large and brilliantly coloured.

Culture.—The plants should be grown in small hanging baskets well drained, using for soil peat fibre and chopped sphagnum moss; it should be kept moist all the year round, and be hung up near the roof glass in the coolest house with the *Odontoglossums*.

N. PUNCTATA, *Lindl.*—This is a little gem, having flowers as brilliant as those of the brightest forms of *Sophranites grandiflora*, it has slender stem-like growths, attaining some 6 inches in height, furnished with distichous oblong lanceolate fleshy leaves which are keeled beneath and rich deep green in colour; flowers on short pedicels from the axils of the leaves, solitary, measuring about $1\frac{1}{2}$ inch across vertically, of a brilliant red saving the short lip which is of a rich clear yellow tinged with orange at the base.—*Peru*.

FIG.—*Bot. Mag.*, t. 5718.

NEOTTIA.—See MACODES PETOLA.

NOTYLIA, Lindley.

(Tribe Vandeeae, subtribe Notyliaeae.)

A genus containing a considerable number of species of somewhat inconspicuous plants, indeed some of them so much so as to be quite worthless to the ordinary amateur, but the few kinds which we have here introduced are exceedingly interesting and they occupy but little space. They are natives of various parts of South America and Mexico, and may

be distinguished by their small pseudobulbs, which bear a single leaf on the apex, but these are surrounded by several sheathing herbaceous ones at the base. The scape is radical and bears a long raceme, flowers small, the lower sepals being connate and the lip clawed and quite entire.

Culture.—These plants thrive well on blocks of wood having a little sphagnum attached to their roots, or they be grown in small pans or baskets hung up near the glass, well drained, using for soil peat fibre and chopped sphagnum moss. They may be grown in the cool end of the *Cattleya* house with a nice moist atmosphere, but in the summer they may be grown in the warm end of the *Odontoglossum* house, keeping them moist all the year round.

N. ALBIDA, *Klotzsch*.—This plant is said to have been originally discovered by Warscewicz in Central America many years ago, since which time it has been found in various parts of South America and Mexico. It is a plant having small compressed pseudobulbs and oblong obtuse coriaceous leaves which are keeled beneath, slightly channelled above, deep green on the upper side, pale green below; raceme some 6 or 7 inches long and densely flowered; flowers white suffused with a tinge of lemon-yellow, having much the appearance of *Angraecum citratum*. It blooms in the spring and early summer.—*South America; Mexico; (?) Central America*.

FIG.—*Bot. Mag.*, t. 6311.

N. BICOLOR, *Lindl*.—Is a charming little plant with equitant leaves, scape longer than the leaves; raceme dense, flowers small; sepals white, the petals slightly shorter than the sepals, these are mauve coloured, bearing some bluish-lilac spots near the base. It blooms very freely in the autumn months.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 5609.

OCTADESMIA.—See LAELIA MONOPHYLLA.

ODONTOGLOSSUM, *Humboldt, Bonpland, et Kunth*.

(Tribe Vandaeae, subtribe Oncidieae.)

This is undoubtedly the most popular genus of cool Orchids at the present time, and is likely to increase in popular estimation, to which so many magnificent additions have been made during the last few years that it now contains some of the choicest and most useful decorative species in cultivation. Natural hybrids have come to hand in large quantities and have greatly puzzled Botanists, resembling as they do so closely some of the existing species; in this connection we have considered it best to



ODONTOGLOSSUM HOUSE IN TH
Dimensions 80 ft. by



VICTORIA AND PARADISE NURSERIES.

(From a Photograph.)

follow the nomenclature at present existing in gardens, and not to interfere with the conflicting views held by certain authors. In so extensive a genus it might be expected that some of the species would be of inferior merit, as regards their ornamental properties, and such is indeed the case; but all those here described are worthy of a place in every collection. They are all of them evergreen, producing their flower scapes from the base of the pseudobulbs, which in some of the species are stout and thick, and in others are of small size, with small narrow foliage. They have usually spreading flowers with the sepals and petals free, or the lateral ones very shortly connate at the base, the claw of the lip, which is often very short, being parallel with the exauriculate column, and the limb spreading. The scapes are rarely short and few flowered, more frequently paniculately branched, and the flowers are mostly of a showy character. Upwards of a hundred species have been found in the South American Andes, Mexico, and Central America, in fact they may be said to range from N. latitude 20° in Mexico to S. latitude 15° in Bolivia, a distance of about 2,000 miles, at various altitudes ranging from 5,000 to 12,000 feet elevation, and the major part of them have already made their way into our Orchid collections. The demand for these plants has become very great, and this is not to be wondered at, for they are a very lovely class of flowers, and can be grown in a cool house at a less expense than the more stately Brazilian and East Indian Orchids. In the form of cut blooms and otherwise, they yield very much enjoyment to lady cultivators. The flowers of many of them are exquisitely beautiful, and they continue a long time in perfection. It is much to be regretted they have been so difficult to import: large quantities of the plants collected from their native habitats having died before they reached this country. We have opened many boxes of these valuable plants, and have found them all dead, and we have also had many arrive in excellent condition. Of late years the methods of packing these plants have been much improved upon, and now one can depend upon a larger proportion reaching this country in a living state.

Culture.—The *Odontogloss*s require to be placed either in an intermediate or cool house to grow them successfully. With the exception of *O. Krameri*, which thrives better with the *Cattleyas*, they succeed best in a cool house, the temperature of which in autumn and winter ranges from 45° to 55° . Some are best grown in baskets, while most of the

species do best in pots, in rough fibrous peat with live sphagnum moss placed on the surface, and good drainage below; a liberal supply of water at the roots being required during the growing season—in fact, they never should be allowed to get dry at the roots. The plan of having some live sphagnum moss growing on the top of the soil is an excellent one, as it keeps a nice wholesome moisture about the roots, which they seem to delight in. We have also had good results by employing the roots of the common polypody (*Polypodium vulgare*) chopped up with about half the quantity of sphagnum moss; in this material, which is much more porous than peat compost, the plants will take a more liberal supply of water. In continental countries, where peat is difficult to obtain, this compost is almost exclusively used. The best season for potting these plants is in the beginning of autumn, as they will root into the fresh soil and become established before the hot dry weather comes on in the spring and summer. Shade is very essential to the well-being of this class of plants; some growers prefer a north house, but a little sun is very beneficial. They require a liberal supply of air and moisture, great care being taken to prevent cold draughts. Some of the species are subject to insects, such as red thrips, &c., especially if kept a little too warm. When any sign of these pests is seen the plants should be well washed with clean water, for if they are allowed to become seriously infested, the foliage will soon be disfigured by the brown marks caused by the insects. They are propagated by separating the pseudobulbs just as they begin to grow.

O. ACUMINATUM.—See *O. ROSSII*.

O. ALEXANDRAE.—See *O. CRISPUM*.

O. ANDERSONIANUM, *Rehb. f.*—This singularly beautiful and very interesting plant is evidently a natural hybrid between *O. crispum* and *O. gloriosum*. The pseudobulbs and leaves resemble those of *O. crispum*, but the flowers, which are strongly scented, are more distinctly suggestive of *O. gloriosum*. The ovate-oblong acute slightly crispy sepals and petals are creamy-white, with bright chestnut-brown oblong spots, and the oblong-pandurate apiculate lip, which is also creamy-white, is yellow at the base, with numerous small spots of crimson, in front of which are a pair of blunt teeth, while the anterior part sometimes bears a largish irregular patch of confluent spots. It is named in compliment to Mr. Anderson, late of Meadow Bank, Uddingston, near Glasgow. We have had it with fifty flowers, and a fine appearance it made when shown at the Manchester Royal Botanic Gardens. This species, like *O. crispum*, throws up its spikes of flowers nearly all the year

round, but the greater number of plants will be found to flower from February to April.—*New Grenada*.

FIG.—*Orchid Album*, i. t. 35; *Floral Mag.*, 2nd ser., t. 45; *L'Orchidophile*, 1885, p. 133 (plate), f. 7; *Veitch's Man. Orch. Pl.*, i. p. 26; *Gartenflora*, 1890, t. 1326.

O. ANDERSONIANUM ANGUSTATUM, *Rchb. f.*—A variety flowered in the collection of M. A. Finet, of Argenteuil, France, having narrower sepals and petals and larger blotches than the type.

FIG.—*L'Orchidophile*, 1889, p. 277 (plate).

O. ANDERSONIANUM IMPERIALE, *O'Brien*.—This fine variety was flowered by W. J. Thomson, Esq., Ghyllbank, St. Helens, Lancashire. The colour of the sepals and petals is clear pale-yellow, heavily blotched with blood-red; lip broader than in some forms, bearing a large blotch of chestnut-red.

O. ANDERSONIANUM LOBATUM, *Rchb. f.*—This variety has the numerous flowers $2\frac{1}{2}$ inches across; the sepals and petals being both of a creamy-white, with numerous small elegant chestnut-brown spots on their base; and the lip, which bears rather spreading narrow side lobes, is spotted with the same brown colour towards the centre, and there are two lines of chestnut-brown extending for about half an inch from the base of each of the petals. A variety called *Lemoinianum* by the late Professor Reichenbach has the sepals and petals bordered with yellow and some yellow on the base of the lip.—*New Grenada*.

O. ANDERSONIANUM PULCHERRIMUM, *O'Brien*.—This handsome variety appeared in the collection of R. B. White, Esq., of Arddarroch, Garelochhead. It is believed to be a natural hybrid, and is described by Mr. O'Brien as follows:—"In colour it more nearly resembles *O. Ruckerianum*, but its segments with their long tendril-like recurved tips call to mind *O. cirrhosum*; the sepals and petals are nearly equal at their bases, and in a band up the middle, one-third their length they are cream-coloured, with three to five bright brownish-red blotches; the remainder or the greater part of the sepals and petals are bright rosy-purple, with a well-defined lemon-yellow margin, the reverse of the flower being almost as richly coloured as in the front; the long narrow labellum, which is serrated at the edge, is clear yellow, with one irregular brown blotch in the centre" (*Gardeners' Chronicle*, 3rd ser., 1892, xi. p. 586).

O. ANDERSONIANUM SPLENDENS, *Williams*.—A very fine and distinct variety flowered in the collection of R. H. Measures, Esq., Streatham. The flowers are larger than the type; sepals and petals white tinged with rose and blotched with chestnut-brown; throat yellow, lined with crimson and spotted with dark brown on each side.—*New Grenada*.

FIG.—*Orchid Album*, vii. t. 292.

O. ANGUSTATUM, *Lindl.*—A very distinct species, producing pyriform ancipitous pseudobulbs, each with one broad lanceolate leaf from its apex, and about four accessory ones at its base. The flowers come in erect panicles, which have short branches; they have linear, very much acuminate sepals, which are greenish with a median line of brown, and broader much crisped

petals, which are yellow with shining transverse bars of cinnamon-brown, and a white lip, the anterior part of which is oblong triangular wavy and toothletted, with brown streaks and bars, and a crest of two serrate lamellae, one long acute middle keel, and a tooth on each side of it.—*Peru*.

FIG.—*Batem. Mon. Odont.*, t. 26.

O. APTERUM.—See *O. Rossii*.

O. ASPERSUM, *Rchb. f.*—A little gem, supposed to be a natural hybrid between *O. maculatum* and *O. Rossii*. The pseudobulbs are similar to those

of *O. maculatum*, but smaller, as are the flowers. The sepals and petals are yellowish-white, mottled on the inner surface with numerous brown blotches, the petals much broader than the keeled sepals, with a few brown spots at their base; the cordate acute lip is creamy-white with yellow crests. At first sight this flower reminds one of a yellow variety of *O. Rossii majus*. It flowers during the winter months.—*Mexico*.

FIG.—*Orchid Album*. vi. t. 245.



ODONTOGLOSSUM ASPERSUM.
(From the *Journal of Horticulture*.)

**O. ASPERSUM VIO-
LACEUM**, *Rchb. f.*—A variety with deep mauve-

purple lip, and having the petals "sulphur-coloured with a broad margin of light mauve-purple."

O. ASTRANTHUM, *Linden et Rchb. f.*—This pretty species bears a considerable resemblance to *O. odoratum*. It produces a large branching panicle, bearing upwards of fifty flowers, which are nearly 2 inches in diameter, with the organs stellately disposed; the lanceolate acuminate sepals and petals are yellowish with purplish-brown streaks and blotches, and the lip, which is ligulate acuminate in front, is white spotted with pale rose, the base of the column being orange with a few reddish-purple spots. Blooms in summer.—*Ecuador*.

O. BAPHICANTHUM, *Rchb. f.*—A supposed wild hybrid between *O. crispum* and *O. odoratum*. The flowers are about 2½ inches in diameter, the ligulate aristate sepals and petals sulphur-yellow, with purplish blotches which finally

become suffused over their whole surface; the lip is pandurate cuspidate serrate, yellow with two or three reddish-brown spots, and a bifurcate callus as in *O. crispum*. The lip is pointed as in *O. Andersonianum*. It flowers during the summer months.—*New Grenada*.

FIG.—*Lindenia*, iii. t. 128.

O. BERGMANI, *L. Lind.*—This novelty was first flowered and exhibited by Mr. F. Bergman, gardener to Baron Alphonse de Rothschild, Ferrières, France, and appears to be a natural hybrid. Flowers 4 inches across; sepals and petals white, the former having broad bands of chocolate-brown; petals irregularly spotted with the same colour; lip white, having a blotch similar in colour on the lower portion and a few smaller spots.—*U. S. of Colombia*.

FIG.—*Lindenia*, vi. t. 286.

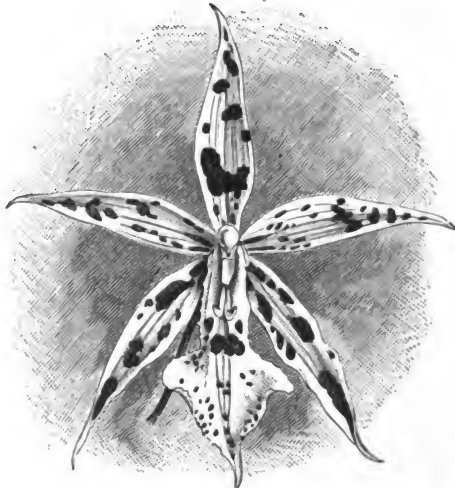
O. BICTONIENSE, *Lindl.*—A well-known free-growing species, with oblong compressed pseudobulbs, bearing two or three ensiform undulated leaves, and upright racemes of flowers, in which the sepals and petals are green spotted with brown, and the cordate acuminate lip lilac or pink, or sometimes white. The variety *album*, figured in *L'illustration Horticole*, 3rd ser., t. 91, has the sepals and petals wholly of a bright chestnut-brown, and the lip white, and that figured as *splendens* in the same work, t. 449, has the sepals green and brown, and the lip bright rosy lilac. The name *africanum* was given by misadventure.—*Mexico: Guatemala*, 6,000—7,000 feet.

FIG.—*Bot. Reg.*, 1840, t. 66; *Bot. Mag.*, t. 3812 (lip whitish); *Batem. Orch. Mex. et Guat.*, t. 6; *Id.*, *Mon. Odont.*, t. 18; *L'ill. Hort.*, t. 449; *Id.*, 3rd ser., t. 91 (*album*); *Flore des Serres*, t. 1502 (lip pink); *Moore, Ill. Orch. Pl. (Odontoglossum)*, t. 6; *Gartenflora*, 1837, t. 1250.

SYN.—*Cyrtorchilum bictoniense*;
Zygopetalum africanum.

O. BICTONIENSE SUPERBUM, *Williams.*—A distinct free-growing variety, much superior to the old form. The pseudobulbs and leaves are light green, the spike erect, many-flowered, the sepals and petals dark chocolate-brown, and the lip large, purplish-mauve marked with darker lines. It blooms during the autumn months, and is a very desirable plant.—*Guatemala*.

O. BLANDUM, *Rchb. f.*—A miniature very free-flowering species, somewhat resembling a dwarf form of *O. naevium*. The flowers have a honey-like fragrance, and are white with brownish-crimson spots; the sepals and petals are equal in size, cuneate-lanceolate acuminate, creamy white, beautifully spotted and freckled with maroon-crimson, and the lip, which is of the same colour but



ODONTOGLOSSUM BLANDUM.

much broader than in *O. naevium*, has a bilamellate claw with a broad ovate acuminate crispy blade. It flowers in early spring.—*New Grenada*.

FIG.—*Batem. Mon. Odont.*, t. 28; *Orchid Album*, v. t. 222; *Reichenbachia*, i. t. 24; *Veitch's Man. Orch. Pl.*, i. p. 14.

O. BLANDUM ALBO-CUPREUM, *O'Brien*.—This variety when first exhibited before the Royal Horticultural Society by Mr. C. Vuylsteke, of Loochristi, Ghent, on March 14th, 1893, was thought to be a distinct species, but since then it has been referred to *O. blandum*. "The segments of this variety are pale primrose, barred and banded (not spotted) with copper-coloured markings, except the tips, which are pale primrose. The labellum, instead of exhibiting the violet markings seen in more or less quantity in the type, is entirely pure white, except at the base, which is yellow, as in typical *O. blandum*" (T. O'Brien, in *Gardeners' Chronicle*, 3rd ser., 1893, xiii. p. 355).

O. BLANDUM ROSSIANUM, *Rchb. f.*—A choice variety, having sepals and petals spotted with brown, lip yellow at the base spotted with red, the upper part spotted and streaked with light purple. Named in honour of H. F. Ross, Esq., of Castagnole, Italy.

O. BLUNTII.—See *O. CRISPUM*.

O. BOWMANNI, *Rchb. f.*—One of the many forms of the variable *O. crispum* which we first saw in 1880 in the collection of F. A. Philbrick, Esq., Q.C. The sepals are white, almost wholly flushed with deep rose colour, and indistinctly blotched with deep rose; the petals are white, slightly spotted with rose towards the base, and the lip is distinct in shape, being broadly hastate, having four or five reddish-brown spots, and a fine large yellow disk.—*New Grenada*.

O. BRANDTII, *Kränzlin*.—A handsome form of obscure affinity, imported with a batch of *O. Pescatorei*, and purchased at one of the sales by Herr Brandt, of Charlottenburg. The sepals are straw-yellow, spotted with maroon in the basal half; the petals also straw-yellow with a narrow band of maroon at the base and a round spot of the same colour about the centre; lip white spotted with red.—*New Grenada*.

FIG.—*Gartenflora*, 1889, t. 1308.

O. BREVIFOLIUM, *Lindl.*—A very free-flowering and handsome species of the *coronarium* group. The pseudobulbs are ovate oblong compressed one-leaved, the leaves ovate oblong, short; the flowers are nearly or quite 2 inches across, numerous, on an erect raceme, of a rich chestnut-brown with a narrow golden border; and the cuneate emarginate lip, which is shorter than the sepals, is of a bright yellow, having a reddish furcate blotch at the base. It blooms in April and May. This flowers more freely than *O. coronarium*, and should be cultivated on that account. This plant is very successfully grown and flowered every year by M. F. Massange de Louvrex, of Liege, Belgium.—*Peruvian Andes*.

FIG.—*Orchid Album*, i. t. 27; *L'III. Hort.*, 3rd ser., t. 170.

O. CAMBRIDGEANUM, *Hort.*—This is one of the many natural hybrids, and was exhibited by R. J. Measures, Esq., of Camberwell. The flowers are large and richly coloured; the sepals being rich reddish-brown tipped with yellow; petals similar in colour, irregularly blotched or stained in the middle, the

extremities deep yellow; lip beautifully fringed, bright crimson in the centre, with a broad marginal band of creamy-yellow.—*Natives country not stated.*

FIG.—*Journ. of Hort.*, 1888, xvi. p. 411, f. 54.

O. CANDELABRUM.—See *O. CORONARIUM*.

O. CARINIFERUM, *Rchb. f.*—A very tall-growing, free-flowering plant, producing oblong sub-ancipital diphyllous pseudobulbs, oblong ligulate leaves, and large spreading panicles of flowers, which have the oblong lanceolate acuminate sepals and petals reddish-brown, greenish outside, and the lip clawed, three-lobed, with the anterior larger lobe cordate acute, white in front, the disk red, and also bearing about five fleshy tubercles, the two lamellae on the violet claw being serrated. It succeeds well in the cool house, and flowers during the winter season, continuing in bloom for three months.—*Central America: Veragua*, 9,000 feet.

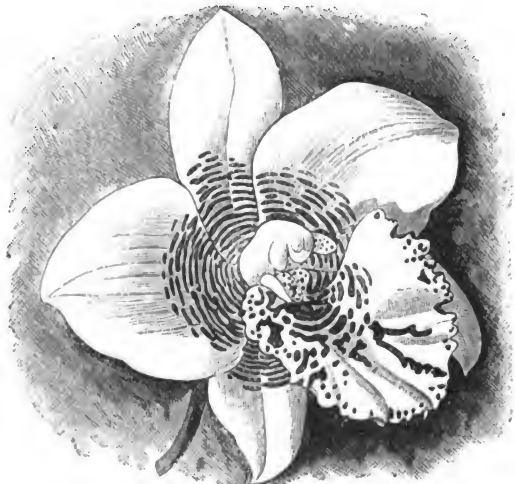
FIG.—*Batem. Mon. Odont.*, t. 10; *Bot. Mag.*, t. 4919; *Batem. Second Cent. Orch. Pl.*, t. 154.

SYN.—*O. hastilabium fuscatum*; *O. falcipetalum*.

O. CERVANTESII, *La Llave et Lezanza*.—A pretty dwarf species with ovate angulate pseudobulbs, solitary oblong leaves, and few-flowered scapes of large sweet-scented flowers, with a slightly cordate and acute lip, the colour a very pale pink, the base of the sepals and petals marked with broken concentric bands of brownish-crimson on a yellow ground, the claw fleshy, cup-shaped, having in front a double tooth, and beyond that a pair of long hairy processes.—*Mexico.*

FIG.—*Bot. Reg.*, 1845, t. 36; *Parton, Fl. Gard.*, i. t. 15; *Moore, Ill. Orch. Pl. (Odontoglossum)*, t. 4; *Orchid Album*, iv. t. 167; *L'Ill. Hort.*, t. 12; *Id.*, 3rd ser., t. 313 (*majus*); *Parton, Mag. Bot.*, xii. p. 193, with tab.; *Floral Mag.*, t. 294; *Veitch's Man. Orch. Pl.*, i. p. 16; *The Garden*, 1887, xxxii. p. 323 (woodcut).

O. CERVANTESII ANDERSONI, *Moore*.—This variety, which is referred to without name by Reichenbach in *Gardeners' Chronicle* (1868, p. 710), has white flowers marked by the usual concentric broken lines or bars of reddish-brown at the base of the sepals and petals, but differs in having the lip bordered by numerous spots of the same colour as the bars at the base of the sepals. It was flowered by Mr. Anderson in the Meadow Bank collection.—*Mexico.*



ODONTOGLOSSUM CERVANTESII DECORUM.

O. CERVANTESII DECORUM, *Rchb. f.*—A magnificent variety of *O. Cervantesii*, with very large flowers measuring nearly 3 inches across. The sepals and petals are white tinged with rose and spotted and

barred with reddish-brown; the lip is large, white tinged with rose blotched with crimson and beautifully fringed. This variety produces as many as three or four flowers on a spike, and when grown in a basket makes a very charming object. It was first exhibited by Sir Trevor Lawrence, Bart., in whose fine collection it flowered.—*Mexico*.

FIG.—*Orchid Album*, vi. t. 251; *The Garden*, 1887, xxxii. p. 322, t. 617; *Journ. of Hort.*, 1887, xiv., p. 107, f. 17; *Reichenbachia*, 2nd ser., i. t. 46.



ODONTOGLOSSUM CIRRHOSUM (Natural size).

(From the *Gardeners' Chronicle*.)

O. CERVANTESII MEMBRANACEUM, Lindl.—A charming small-growing variety of this beautiful species, in which the larger fragrant flowers, which smell of almonds, are pure white having concentric broken lines of crimson at the base, and a deeply cordate retuse blunt lip, marked with a few concentric crimson bars. It blooms during the winter months, and continues in bloom four weeks. This will do on a block of wood or in a pot. There are many forms of this variety. One named *roseum* is a very handsome plant, with the flowers in racemes of five or six together, rose colour, shaded with yellow, and barred with brown, and produced through autumn and winter.—*Mexico*; *Guatemala*.

FIG.—*Bot. Reg.*, 1846, t. 34; *Bot. Mag.*, t. 4923; *Annales de Gand*, 1845, t. 10; *Pescatorea*, t. 5; *Moore, Ill. Orch. Pl. (Odontoglossum)*, t. 5.



ODONTOGLOSSUM
(From the *Gleanings in Europe*)



RRHOSUM.
Chronicle.)

O. CERVANTESII PUNCTATISSIMUM, *Rchb. f.*—A variety having, in addition to the usual spots at the base of the sepals and petals, numerous rosy-purple spots extending to the apex. It flowered recently with Capt. H. P. Greenwood, of Harnham Cliff, Salisbury.

O. CHESTERTONI.—See *O. CRISPUM CHESTERTONI*.

O. CIRRHOSUM, *Lindl.*—This fine species is undoubtedly one of the most elegant and charming of a very charming family, which is also becoming a very numerous one. The plant varies a good deal, but all its forms are pleasing. The character of the flowers is somewhat similar to that of



ODONTOGLOSSUM CIRRHOSUM (reduced).

(From the *Gardeners' Chronicle*.)

O. naevium both in shape and colour, but they are much larger. The pseudobulbs are oblong, narrowed upwards, compressed, with a solitary ligulate oblong leaf from the apex of the bulbs, and one or two pairs of accessory ones at the base; the scape, springing from the axil of the latter, grows from

2 to 3 feet in length, and bears numerous flowers which are star-shaped, and from 4 to 5 inches across; the sepals are narrow lanceolate, much attenuated at the point and slightly undulated, the petals similar but somewhat shorter and broader at the base, both white thickly blotched with bright chocolate-purple; the lip is smaller and shorter but equally attenuated, the expanded base heart-shaped, yellow with deep crimson veins, and a pair of prominent yellow horns, white and spotted like the petals on the anterior part. Some of the many forms produce their flowers in panicles. The name *cirrhosum* is given in allusion to the slender recurved cirrhiform apices of the parts. Flowers produced in spring.—*Andes of Ecuador*; *Guayaquil*.

FIG.—*Orchid Album*, iv. t. 151; *L'Ill. Hort.*, 8rd ser., t. 301; *Floral Mag.*, 2nd ser., t. 222; *Gard. Chron.*, N.S., v. p. 501–503, ff. 91, 92; *Id.*, ix. p. 181, f. 33 (var.); *L'Orchidophile*, 1883, p. 736; *Gard. Chron.*, N.S., 1886, xxv. p. 12, f. 3; *Veitch's Man. Orch. Pl.*, i. p. 17; *Gartenflora*, 1892, t. 1383.

O. CIRRHOSUM ALBUM.—See *O. CIRRHOSUM HRUBYANUM*.

O. CIRRHOSUM HRUBYANUM, *Rchb. f.*—This handsome plant was first exhibited by Messrs. Sander & Co., in February, 1885, at South Kensington, under the name of *O. Hrubyanum*. It closely resembles *O. cirrhosum* both in the shape and colour of its flowers, saving the spotting of the sepals and petals, which are pure white with only a blotch of orange and some red lines at the base of the lip; the flowers are borne in long robust racemes with about twenty blossoms. It is now considered to be a variety of *O. cirrhosum*.—*New Grenada*.

SYN.—*O. cirrhosum album*; *O. Hrubyanum*.

O. CIRRHOSUM KLABOCHORUM, *Rchb. f.*—An altogether superior form of the type, having much larger white flowers more heavily spotted with chocolate-brown, and the sepals and petals developed into much longer tails. It flowers during the summer months.—*Ecuador*.

O. CITROSMUM, *Lindl.*—A charming Orchid, producing long pendulous spikes of fragrant lemon-scented flowers in May and June. It has roundish compressed pseudobulbs, oblong ligulate leaves, and pendent racemes or panicles of large handsome flowers, a dozen or more on one scape, each flower measuring 2 inches across; the oblong obtuse nearly equal sepals and petals are white slightly flushed and sometimes dotted with pink, the crestless reniform emarginate lip mauve-coloured with an orange-yellow claw, having the two sides erect. It flowers in summer, and will continue in perfection for as long as four weeks if kept in a cool house free from damp; moreover, it makes one of the finest plants for exhibition.—*Mexico*.

FIG.—*Bot. Reg.*, 1843, t. 3; *Gard. Mag. Bot.*, ii. p. 261, with tab.; *Moore, Ill. Orch. Pl. (Odontoglossum)*, t. 8; *Flore des Serres*, t. 633; *Lem. Jard. Fl.*, t. 90; *Batcm. Mon. Odont.*, t. 6; *Puydt, Les Orch.*, t. 29; *Veitch's Man. Orch. Pl.*, i. pp. 16 and 18.

SYN.—*Odontoglossum pendulum*; *Oncidium Galtottianum*, *Drapiez*.

O. CITROSMUM ALBUM, *Hort.*—A very chaste and beautiful variety with pure white flowers which are entirely devoid of spots or markings of any kind, except the crest of the lip, which is yellow.

O. CITROSMUM ROSEUM.—A very fine variety of *O. citrosmum*, having the same habit and manner of growth as the type, and producing its beautiful flowers on long drooping racemes. The sepals and petals are white, and the lip a bright rose colour. There are many varieties of this, some of them having more colour than others; the best form we have seen is that figured by Mr. Warner, as quoted below. When the plant is in bloom the pot should be suspended from the roof, so that the pendent racemes may hang down naturally, in which position it produces a charming effect.—*Mexico*.

FIG.—Warner, *Sel. Orch. Pl.*, i. t. 28; *L'Ill. Hort.*, t. 59.

O. CLOWESII.—See *MILTONIA CLOWESII*.

O. CONSTRICTUM, *Linll.*—Although not a large-flowered species, this is a very pretty plant, producing a large branching panicle of gaily-coloured blossoms. The pseudobulbs are rather large, ovoid, compressed, ribbed, supporting a pair of linear-lanceolate leaves 1 foot long, of the same dark green colour, and a slender scape, 1½ feet long, supporting a loosely branched panicle of equal length. The flowers are 1½ inch across (in wild specimens 3 inches); the oblong lanceolate sepals and petals are bright yellow blotched with orange or reddish-brown, the colours often disposed in longitudinal bars, the lip distinctly fiddle-shaped, with an apiculus, white with a pair of oblong rose-coloured blotches in the middle contracted portion, and a pair of small toothed crests on the disk.—*La Guayra*; *Caracas*.

FIG.—*Bot. Mag.*, t. 5736; *L'Orchidophile*, 1889, p. 382.

O. CONSTRICTUM CASTANEUM, *Rchb. f.*—A variety with cinnamon coloured sepals and petals, and one or two greenish white lines at their bases.

O. CONSTRICTUM PALLENS, *Rchb. f.*—This variety has light sulphur-coloured sepals and petals, and a whitish yellow lip.

O. COOKIANUM, *Rolfe.*—When this natural hybrid was first exhibited before the Royal Horticultural Society, by Malcolm S. Cooke, Esq., of Kingston Hill, on November 14th, 1891, without a name, it received an award of merit. It was stated to have been received as *O. blandum*, but it is quite different, and Mr. Rolfe believes it to be a natural hybrid between *O. triumphans* and *O. Sanderianum*, though he adds *O. blandum* may have been one of the parents instead of the latter. It is described as follows:—"Flowers stellate, sepals lanceolate, acuminate, 1½ inch long by 5 lines broad, deep yellow, with numerous smallish blotches of deep chestnut, which pass into lines at the extreme base; petals similar, but a little shorter; lip much like *O. Sanderianum* in shape, stalk 4 lines long, yellow, with a few light chestnut spots, blade subpandurate, abruptly and shortly acuminate, 1 inch long by 6 to 7 lines broad, white, with large bright chestnut blotch in front of the crest, and a few small spots near the margin" (*R. A. Rolfe, in Gardeners' Chronicle*, 3rd ser., 1891 x. p. 696).—*New Grenada*.

O. CORADINEI, *Rchb. f.*—A distinct showy *Odontoglot* supposed to be a natural hybrid between *O. triumphans* and some species of the *O. odoratum* group. The pseudobulbs are elongate ovate compressed, with ligulate oblong

leaves usually in pairs, with accessory ones sheathing the bulbs and evolving from their axils the flower scape with its racème of eight to ten flowers. The flowers are stellate, 3 inches across, with lanceolate acuminate sepals and petals, which are primrose-yellow, with some large irregular blotches of chestnut brown; the lip is shorter, obovate oblong, apiculate, contracted in the middle, paler yellow, with a large squarish blotch of chestnut-red in the central part, and a crest of two upcurved horns on the disk. This plant blooms during the winter months.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 90; *Xenia Orch.*, ii. t. 192, ff. 1—3; *Gard. Chron.*, 1872, p. 1068, f. 251; *L'Orchidophile*, 1885, p. 133 (plate), f. 5; *Gard. Chron.*, N.S., 1886, xxv. p. 269, f. 50; *Reichenbachia*, 2nd ser., i. t. 21.

O. CORADINEI ALBIDULUM, *Rehb. f.*—This variety was first flowered by R. Smith, Esq., of Brentnam Park, Stirling. It differs in having the ground-colour of the segments yellowish-white; the base of the lip is light-sulphur.—*New Grenada*.

O. CORADINEI KINLESIDEANUM, *Rehb. f.*—A distinct variety first flowered in 1885 by the Rev. R. Kinleside, of Tunbridge Wells, an ardent admirer of orchidaceous plants. In this variety the sepals and petals are white bordered with yellow.

O. CORDATUM, *Lindl.*—An old though very distinct and handsome species of free-growing and free-blooming habit, and one therefore which deserves to



ODONTOGLOSSUM CORDATUM.

be grown for its utility. It has oblong obtuse compressed pseudobulbs, broadly oblong acute leaves, and distichous racemes of prettily spotted flowers on scapes which issue from the axils of accessory leaves, and grow about a foot in height. The flowers are stellately expanded, with lanceolate caudate acuminate sepals and shorter broader petals, both yellow, the surface of the sepals almost wholly covered by numerous transverse oblong bars of bright chestnut-brown, that of the petals with roundish blotches of the same colour; the lip is cordate acuminate, white with a line of brown spots down the centre and another round the margin, the apex being wholly brown, the claw bearing a bilobed fleshy appendage or crest. There are many varieties of this species, which requires to be grown in a pot in pent.—*Mexico; Guatemala*.

FIG.—*Orchid Album*, iv. t. 186; *Knowles and Westo., Floral Cab.*, t. 100; *Pescatorra*, t. 26; *Bot. Mag.*, t. 4878 (as *maculatum*); *Batem. Second Cent. Orch. Pl.*, t. 167; *Id.*, *Mon. Odont.*, t. 25; *Gartenflora*, t. 356; *The Garden*, 1885, xxvii. p. 46; *Vitch's Man. Orch. Pl.*, i. p. 21.

SYN.—*O. Hookerianum*.

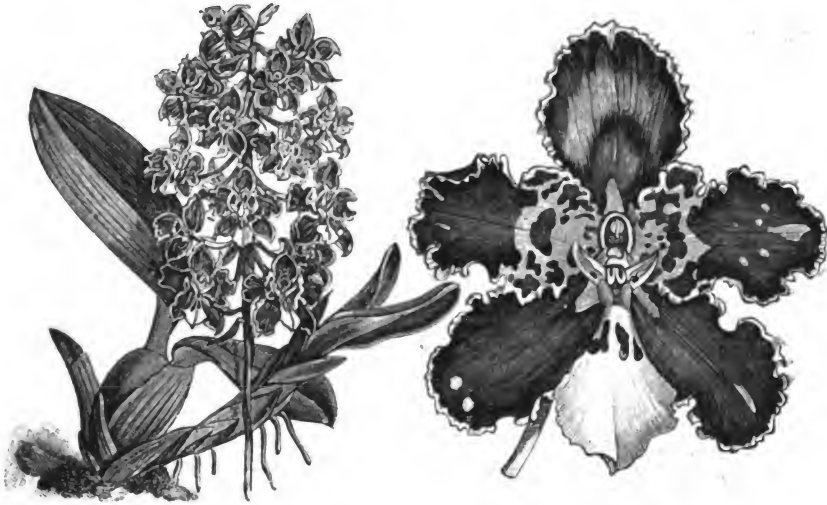
O. CORDATUM AUREUM, *Hort.*—A very chaste and beautiful variety, having the sepals and petals cream colour blotched with deep sulphur-yellow, those near the base being tinged with green; lip pure white except the apex which is also sulphur-yellow.—*Mexico*.

FIG.—*Orchid Album*, xi. t. 489.

O. CORDATUM SULPHUREUM, *Rehb. f.*—A curious variety, in which the flowers have sulphur-coloured sepals, while the petals and lip are white with sulphur-coloured tips and blotches; it was flowered by Mr. F. Sander in 1880.—*Mexico*.

O. CORDATUM SUPERBUM, *Hort.*—This is a very fine variety of the old and useful *O. cordatum*. It produces flower scapes upwards of 2 feet high and very much branched, and in which the flowers are not only larger, but their colours very much richer than in the type. There is a fine plant of this variety in the collection of Baron Sir J. H. W. Schröder, The Dell, Staines.—*Mexico*.

O. CORONARIUM, *Lindl.*—A charming and very distinct species, one of the finest in the genus. It has oval compressed shining pseudobulbs and dark



ODONTOGLOSSUM CORONARIUM.

green oblong coriaceous leaves. The scape, which rises upright from the side of the bulb, is about $1\frac{1}{2}$ foot in height, and bears a many-flowered raceme a foot long, loaded with flowers which are nearly 2 inches broad; the sepals and petals reddish-brown edged with yellow, the cuneate retuse lip bright yellow. It does best in a pot or basket in peat, and will continue a long time in perfection. This species is generally considered difficult to bloom, but we think this is due to bad cultivation, since Sir T. Lawrence, Bart., flowers it frequently, grown in a house along with other *Odonoglossa*.—*New Grenada*.

FIG.—*Pencatorea*, t. 47; *Warner, Sel. Orch. Pl.*, iii. t. 4; *Batem. Mon. Odont.*, t. 27; *Veitch's Man. Orch. Pl.*, i. p. 23; *Reichenbachia*, 2nd ser., i. t. 35.

SYN.—*O. candelabrum*.

O. CRINITUM, *Rehb. f.*—According to the late Professor Reichenbach, the present species is quite distinct from any other *Odontoglossum*. It was discovered by Roezl in Eastern New Grenada, and later by Wallis. The flowers, of the size of *O. odoratum*, are produced in racemes; sepals and petals lanceolate acuminate, ochre-yellow with dark cinnamon spots; lip trilobed, white spotted with brown; anterior lobe triangular, the margin somewhat undulate and toothletted. It was first flowered by J. Broome, Esq., at Wood Lawn, Didsbury, Manchester.—*New Grenada*.

FIG.—*Xenia Orchidacea*, ii. t. 191, ff. 4-6.

O. CRINITUM SAPPHIRATUM, *Rehb. f.*—Much superior to the type in shape and colour; the lip is white, covered with bluish-mauve spots, the petals and column are also tinted with mauve at the base. It was flowered by A. H. Smee, Esq., of The Grange, Carshalton.—*New Grenada*.

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 197, f. 29.

O. CRISPUM, *Lindl.*—One of the most beautiful and most useful of Orchids, which from its identity with *O. crispum* not having been at first discovered, and from its having when originally introduced in a living state received the popular name of *O. Alexandrae*, is perhaps even yet better known in gardens by this latter designation. It is a charming addition to our collections, and one which affords many variations, ranging from a pure white to yellow and rose, and including various highly spotted forms. The pseudobulbs are oblong ovate compressed, with a pair of ligulate oblong acute leaves, and radical scapes



ODONTOGLOSSUM CRISPUM
(much reduced).

from the axils of accessory leaves, bearing racemes or panicles of the lovely flowers, which often have the ovate lanceolate sepals flushed with rose, the broadly ovate pure white petals being much undulated, and the oblong ovate lip much crisped and acuminate, with a rich yellow stain over the diskal portion, and having one or two small red-brown spots about the centre, and a series of radiating lines of the same colour at the base. This is regarded as a fair example of the species, but, as just noted, there are many varieties of the plant, some much finer and larger than others, though very few prove altogether inferior. It is a most graceful plant, producing its lovely spikes of bloom freely when kept quite cool, and lasting in beauty a long time if the flowers are kept free from damp. This indeed is the case with all white or light-coloured

flowers when placed in a cool house; if they become damp they soon get spotted, and so lose their beauty. The form which originally received the name of *O. Alexandrae* had nearly pure white flowers, with a bright golden blotch on the lip. The plant called *O. Bluntii* is a form with white sepals and petals shaded with rose and richly spotted with purplish-crimson, the lip also being profusely spotted.

We may repeat that this is the most useful of all the *Odontoglossa*, indeed of

all Orchids, and one cannot have too many of it, so useful is it for every purpose for which flowers are grown. This plant may be said to be a perpetual bloomer, flowering as it does at different times of the year as the bulbs are completed. In fact, where a collection contains a number of specimens of this plant, one may always depend upon having a supply of blossom at any season of the year, the greatest number of flowers, however, will be found to present themselves from early in February to the end of April. So useful is this Orchid for many purposes, that many collectors have hundreds and some thousands in their collections.—*New Grenada: Bogota*, at an altitude of 7,000 to 8,000 feet.

FIG.—*Orchid Album*, i. t. 47; *Jennings, Orch.*, t. 26; *Floral Mag.*, t. 343; *Bateman, Mon. Odont.*, tt. 14, 19; *Flore des Serres*, t. 1652 (*Bluntii*); *L'Orchidophile*, 1885, p. 132 (plate), f. 1; *Lindenia*, i. t. 48; *Vitch's Man. Orch. Pl.*, i. pp. 24, 25, and 29; *Gartenflora*, 1887, t. 1256; *Revue Hort. Belge*, 1888, p. 97 (plate); *Reichenbachia*, i. t. 1.

SYN.—*O. Alexandrar*; *O. Bluntii*.

O. CRISPUM AMESIANUM, *Hort.*—A variety with handsome and bold flowers, which measure nearly 5 inches across; the sepals are broadly-lanceolate flushed with bright rosy-crimson, having in the centre two or three large irregular blotches of rich reddish-brown, and the two lateral ones have besides a few smaller ones of the same colour near the margin; petals broadly rhomboid, with undulated margins, white with rich chocolate-brown spots confluent into a central clearly defined blotch.

FIG.—*Journ. of Hort.*, 1891, xxii. p. 361, f. 66.

O. CRISPUM AUREUM, *Hort.*—One of the best yellow varieties of *O. crispum* we have yet seen. The sepals and petals are of a deep lemon-yellow, the sepals spotted with brown; and the lip is yellow, having two brown spots on the anterior part. This variety was exhibited by F. A. Philbrick, Esq., Q.C., Bickley, at the Royal Horticultural Society's meeting in February, 1884, and was awarded a first-class certificate.—*New Grenada*.

O. CRISPUM BALLANTINEI, *Rehb. f.*—A fine variety, having the sepals almost covered with a large blotch of reddish-brown, petals with one or more smaller spots of the same colour, and lip similarly spotted. It was named after Mr. H. Ballantine, the energetic gardener of Baron Sir J. H. W. Schröder.—*New Grenada*.

O. CRISPUM BONNYANUM, *Hort.*—A distinct and beautiful form flowered by Mr. Bonny, late of Hackney, in 1883. The flowers are bold in form; sepals broad, tinted with rose, having a large chestnut-brown blotch in the centre; petals white, lip white, with a large pale-brown blotch on the lower portion and four or five small spots near the margin.—*New Grenada*.

O. CRISPUM BOWMANII, *Rehb. f.*—A very handsome variety, flowered in 1880 by F. A. Philbrick, Esq., Q.C. Flowers 3 to 3½ inches in diameter; sepals flushed with deep rose colour, and irregularly blotched with deep rosy-purple, broadly margined with white; petals white, deeply serrate at the margin, spotted and streaked in the median portion with rosy-purple.—*New Grenada*.

O. CRISPUM CHESTERTONI, *Rchb. f.*—A very handsome *Odontoglot*, introduced by the late Mr. Chesterton. It has the sepals much serrated, white heavily barred with reddish-brown, the petals white with a few small reddish-brown spots towards the centre, deeply toothed at the edge, and the lip pale yellow, having a large reddish-brown blotch in the centre, and the margin beautifully fringed. It flowers at different times of the year, after the growth has been completed.—*New Grenada*.

FIG.—*L'Orchidophile*, 1885, p. 133, f. 8 (plate).

SYN.—*O. Chestertoni*.

O. CRISPUM COOKSONI, *Williams et Moore*.—A very splendid variety, one of the best spotted forms yet obtained. The sepals and petals are white, heavily marked in broad patches with dark brownish-crimson, and the lip is white, having a large blotch of the same brownish-crimson on its anterior part and a few spots on either side of the crest, which, with the disk, is golden-yellow. It flowers during the summer months.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 118; *Journ. of Hort.*, 1886, xii. p. 471, f. 88.

O. CRISPUM DUVALI, *Godefroy*.—A handsome variety, flowered by M. Duval, of Versailles. The segments are of fine form and bold substance; the sepals white, faintly tinted with rose, and having a large central reddish-brown blotch, and a few indistinct markings near the margins; petals white, having a large reddish-brown central blotch; lip white, also blotched with reddish-brown. This variety has the peculiarity of having the outside of the sepals distinctly marked with brown.—*New Grenada*.

FIG.—*L'Orchidophile*, 1836, p. 255 (plate).

O. CRISPUM FASTUOSUM, *Hort.*—A very distinct and beautiful variety, with flowers 3 to 4 inches in diameter; sepals lanceolate, with revolute and undulate margins, white, having a central stripe of rosy-lilac, and a few round purplish-brown spots, generally clustered; petals white, irregularly serrate at the margins, having one or two purplish-brown spots; lip large, white, undulate at the margins, having a few brownish-purple spots in the centre as well as a row of small ones on the margins near the base.—*New Grenada*.

O. CRISPUM FLAVEOLUM, *Rchb. f.*—A most distinct and pleasing variety, having the flowers of a pale sulphur yellow-colour, and the lip of a bright yellow, marked with about three reddish-brown spots.—*New Grenada*.

FIG.—*Orchid Album*, i. t. 43.

O. CRISPUM GIGANTEUM, *Moore*.—A magnificent variety, in which the pseudobulbs and leaves are large and robust, and the flower spike 3 feet high, and many-flowered. The flowers are large, 4½ inches across, white slightly flushed on the sepals with blush, the sepals and petals otherwise colourless, very broad and very densely frilled; the lip, which is large and frilled, with a broad apiculate recurved apex, has the usual yellow disk, and in front of it a few chestnut-brown spots, which are sometimes confluent into an irregular blotch. The noble flowers are arranged in two series, one on each side the rachis, and form a full secund inflorescence.—*New Grenada*.

FIG.—*Warner. Sel. Orch. Pl.*, iii. t. 20.



ODONTOGLOSSUM CRISPUM.

O. CRISPUM GUTTATUM, *Moore*.—A very handsome variety, in which the flowers are large, white; the sepals and petals bearing a few spots of reddish-brown; and the lip is large, deep yellow at the base, and there dotted with red, having a single large spot in its central part and other smaller spots along the margin.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5697; *Puydt, Lex Orch.*, t. 28; *Orchid Album*, ii. t. 94.

O. CRISPUM GUTTATUM XANTHOGLOSSUM, *Rehb. f.*—A very beautiful variety, having a yellow lip, which has a large five-lobed cinnamon blotch on the anterior part; sepals blotched with cinnamon; the petals have a large irregular blotch of the same colour on a pale yellow ground. We saw this plant well flowered in the grand collection of *Odontogloss* belonging to David Tod, Esq., at Thornliebank, Glasgow, in May, 1883, and again in December, 1886, when we were much struck by its beauty.—*New Grenada*.

O. CRISPUM HRUBANUM, *Rehb. f.*—It is in the way of *O. crispum Veitchianum*. Sepals plicated along the disk with brown and adorned at the margins with mauve; petals triangular, toothed and wavy brown in disk, with mauve marginal decoration. We give the Professor's description, which does not, however, agree with the figure in the *Reichenbachia*. It is dedicated to Baron Hruby, of Peckau, Austria.—*New Grenada*.

FIG.—*Reichenbachia*, i. t. 29.

O. CRISPUM HYPERXANTHUM, *Rehb. f.*—A somewhat peculiar variety, being devoid of brown spots. The sepals are pure white; petals white, with a few light yellow spots; lip and column yellow. It originated in the collection of Sir Trevor Lawrence, Bart.—*New Grenada*.

O. CRISPUM KINLESIDEANUM, *Rehb. f.*—A very extraordinary variety in the collection of the Rev. R. Kinleside, of Tunbridge Wells. "Sepals white to lightest mauve, petals with deep purple mauve stripes, partly longitudinal, partly radiating, and numerous cartilaginous teeth on the surface; lip convex, with serrate yellow keels, a brownish blotch in front and similar stripes on each side. The convex lip and the teeth on the surface of the petals remind one of the side of a sturgeon" (H. G. Reichenbach, in *Gardeners' Chronicle*, n.s., 1886, xxv. p. 716).—*New Grenada*.

FIG.—*Reichenbachia*, i. t. 45.

O. CRISPUM LEHMANNI, *Rehb. f.*—A remarkable variety, with narrow leaves, and flowers smaller than those of the type, and described as being produced on a branching inflorescence, sometimes as many as fifty in one panicle. There are several reddish-brown spots on the lip of this variety, which is very distinct, being much broader than that of the typical *O. crispum*, and altogether a rounder flower.—*New Grenada*.

O. CRISPUM MARIANAE, *Moore*.—A very handsome and distinct variety, which was first flowered by R. Warner, Esq. The flowers are about $2\frac{1}{2}$ inches in diameter; the sepals being as broad as the petals, both pale-rose colour, heavily blotched with reddish-purple; and the lip is white, spotted profusely with pale brown, and having a yellow disk.—*New Grenada*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 32.

O. CRISPUM MIRABILE.—See *O. CRISPUM VEITCHIANUM*.

O. CRISPUM MUNDYANUM, *Sander*.—A neat-shaped form, having the sepals and petals very regularly and heavily spotted with purplish-brown, and the lip with reddish-brown spots. It is dedicated to A. E. Mundy, Esq., of Shipley Hall, Derby, whose fine collection of Orchids is so admirably well managed by Mr. Elphinstone, his able gardener.—*New Grenada*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 5.



ODONTOGLOSSUM CRISPUM NOBILIUM.
(From the *Gardeners' Chronicle*.)

O. CRISPUM NOBILIUM, *Hort*.—Certainly one of the finest and noblest forms. The sepals are nearly covered with a reddish-brown four- or five-lobed blotch; the petals have from two to four irregular blotches of the same colour.

while the lip is ornamented with one large angular blotch and several smaller ones. This variety is in the collection of Baron Sir J. H. W. Schröder.—*New Grenada*.

FIG.—*Gard. Chron.*, 3rd ser., 1892, xi, p. 235, f. 33; *Journ. of Hort.*, 1892, xxiv, p. 220, f. 34; *Gard. Mag.*, 1893, p. 220 (woodcut).

O. CRISPUM OCCASUS, *Warner*.—This lovely variety was first flowered by Robert Warner, Esq., of Chelmsford. The sepals have a broad median band of pale orange, which towards the margins gradually deepens into a dull rosy-purple; petals deeply serrated, margined with white, flushed with rosy purple, having a median band of pale yellow; lip white, yellow at the base, furnished with two small reddish spots.—*New Grenada*.

O. CRISPUM OUTRAMII, *Williams*.—This is a splendid variety, compact in growth, and handsome when in flower. The bulbs are about 3 inches in height, with leaves 10 or 12 inches in length, and of a lively green; the scape proceeds from the base of the bulb, growing from 18 inches to 2 feet long, and having some twelve or thirteen flowers; the sepals are white, flushed with rose colour, and the petals are also white, with two or three clusters of chestnut-brown spots and blotches, these forming a charming contrast with the lighter-coloured forms of *O. crispum*.—*New Grenada*.

FIG.—*Orchid Album*, ix, t. 403.

O. CRISPUM PLUMATUM, *Williams*.—A very pretty variety which flowered in our nurseries. Flowers upwards of 3 inches across, spreading, and very showy; sepals ovate-lanceolate, acute, with plain edges, white, suffused with soft rose, and freely dotted and spotted with rich bright cinnamon; petals ovate, much broader than the sepals, dentate and undulate on the edges, so much so as to produce quite a plumose effect, same colour as the sepals but with fewer spots; lip oblong, truncately rounded at the point and cuspidate, having the margin much toothed and fringed, white, tinged with rose, and dotted with cinnamon; crest yellow, rayed.—*New Grenada*.

FIG.—*Orchid Album*, ix, t. 414.

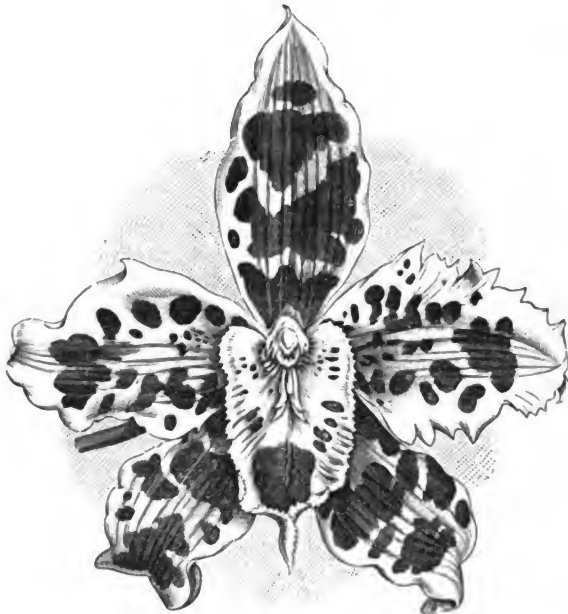
O. CRISPUM REGINAE, *Hort. Philbrick*.—Flowers fully $3\frac{1}{2}$ inches deep, and as much in breadth, white, beautifully spotted with deep brownish-purple; sepals lanceolate acuminate, wavy, entire, white, the lower two-thirds bearing from eight to ten oblong sometimes confluent spots of a deep reddish-brown or chocolate colour; petals broader, ovate acuminate, the edges deeply and irregularly toothed, spotted like the sepals with reddish-brown, the spotting mostly ranged in two lines just within the margin, lip oblong cuspidate, crispato-undulate, white with a yellow disk, and marked with one large spot of reddish-brown near the end of the broader portion, beyond which it is shortly cuspidate, and having one or two similar spots on each side at the edge of the yellow, the base furnished with several radiating lamellae which are lined with crimson, and having a crest of two divergent elongated ridges.—*New Grenada*.

FIG.—*Orchid Album*, vi, t. 264.

O. CRISPUM ROSEUM, *Moore*.—A very handsome and distinct variety, having the sepals and petals deeply tinted with lilac-rose colour, and marked

with a few irregularly scattered spots of chestnut-brown; the lip, which is white, and broad at the tip, with a recurved apiculus, is more freely spotted with brown, the yellow disk being less prominent.—*New Grenada*.

FIG.—*Floral Mag.*, 2nd ser., t. 269.



ODONTOGLOSSUM CRISPUM STEVENSII.

O. CRISPUM SANDERIANUM, *Hort.* — A very distinct and beautiful variety, having large port-wine coloured blotches on the sepals and petals. It was exhibited by Baron Sir J. H. W. Schröder, at the Orchid Conference of the Royal Horticultural Society in May, 1885.—*New Grenada*.

O. CRISPUM SCHRÖDERIANUM, *Hort.* — A splendid variety, named in honour of Baron Sir J. H. W. Schröder. Sepals, petals, and lip covered with one or two large reddish-brown blotches and several smaller ones.—*New Grenada*.

O. CRISPUM STEVENSII, *Williams et Moore*.—One of the finest of the spotted forms, with noble flowers 3 inches across. The sepals and petals are white, very heavily spotted and blotched with bright cinnamon-brown; the lip is also similarly spotted, and has the orange stain on the disk very prominent. It is quite one of the best forms yet observed.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 127.

O. CRISPUM TRIANAE, *Moore*.—A superb variety, with very large flowers nearly 3 inches in diameter. The sepals are white shaded with rose, the dorsal one having a single large round spot of ferruginous red in the centre, while the lateral ones have each three such spots, with a patch of several smaller ones of bright rose on their outer half; the petals are pure white, very broad, toothed, and wavy; and the lip, which is broad and two-lobed at the apex, has the usual yellow disk, and a large blotch of ferruginous or coppery-red in the centre, with smaller spots of the same colour along the upper margins. It flowers in October.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5691; *Lindenia*, iii. t. 107; *L'Orchidophile*, 1885, p. 133 (plate). f. 6.

O. CRISPUM VEITCHIANUM, *Rehb. f.*—This is one of the most distinct and richly coloured of all the many beautiful forms of *O. crispum* at present intro-

duced. In its pseudobulbs, leaves, and inflorescence it resembles the typical plant. The flowers are produced in well-furnished racemes, and are of large though perhaps not the largest size, broad and well filled out as to form, and very gaily coloured. The sepals are broadly ovate with the edges undulated, and the base very little narrowed, white, with about two large central blotches of deep brownish-crimson, and a row of smaller oblong blotches outside these, all being enclosed by a belt of purplish-rose some distance within the margin, which preserves its pure white character. The petals are also ovate, but considerably broader and more decidedly undulated, the margins being also toothed; the colour resembles that of the sepals, but there is frequently only one central blotch, which is then larger than those on the sepals; the lip is oblong, broad, and well displayed, white with yellow disk, the surface marked by a few crimson splashes over the central parts, and pencillings near the edge, with the usual radiating lines round the base of the column. It is certainly one of the handsomest forms that has yet appeared. The plant is now in the rich collection of Baron Sir J. H. W. Schröder, of Staines.—*New Grenada*.

FIG.—*Flor. and Pom.*, 1884, p. 177, t. 623; *Gard. Chron.*, 3rd ser., 1887, i. p. 799, f. 151.
 SYN.—*O. crispum mirabile*.

O. CRISPUM VIRGINALE, *Williams*.—This is a pure white variety, having very large flowers of fine substance, without either spot or tinge of pink in the sepals and petals; the disk and crest of the lip yellow as in the type. It was exhibited by us at South Kensington in November, 1882, when it received a first-class certificate.—*New Grenada*.

O. CRISPUM WARNERI, *Moore*.—A magnificent form of this beautiful species, exhibited at the Royal Horticultural Society's Exhibition in 1869. It is a large-growing vigorous form, with long close secund racemes of very large blossoms, upwards of 3 inches in diameter, having the sepals white stained with rose, and spotted on the central area with about half a dozen oblong spots of chestnut-brown; the petals very broad, dentate at the edges, pure white; and the lip, which is large and densely frilled, white stained at the base with rich yellow, in front of which is a large squarish patch of bright chestnut-brown. This fine variety has been well figured by Mr. Warner, in the work cited below.—*New Grenada*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 23.

O. CRISPUM WILSONII, *Williams*.—A lovely form which flowered in the collection of the late A. Wilson, Esq., of Sheffield. Flowers beautifully coloured; sepals oblong-lanceolate, white suffused with rose, spotted and blotched with chestnut-brown; petals ovate, undulated, white suffused with rose, and heavily spotted with chestnut-brown in the upper part; lip slightly shorter than that of the normal plant, ovate, toothed at the edge, white, spotted in front with chestnut-brown; column club-shaped, chestnut-brown.—*New Grenada*.

FIG.—*Orchid Album*, ix. t. 387.

O. CRISPUM WOLSTENHOLMIAE, *Rehb. f.*—Another beautiful variety, dedicated to Mrs. Wolstenholme, sister to the late J. Day, Esq., at one time one of the most enthusiastic Orchid growers. The sepals and petals are pure white, spotted with rich brown and bordered with mauve.—*New Grenada*.

O. CRISPUM WRIGLEYANUM, *Hort.*—A most handsome variety, dedicated to E. G. Wrigley, Esq., of Howick House, Preston. We saw the plant at the Whit-week Show of the Royal Botanic Society at Manchester in 1893, when it was exhibited by F. Hardy, Esq., of Tyntesfield, Ashton-upon-Mersey, who was kind enough to send us a spike for figuring in the *Orchid Album*. The flowers are of fine form and substance; the sepals and petals being beautifully veined margined and suffused with rosy-purple, which gives the flower an altogether unique appearance.—*New Grenada*.

FIG.—*Orchid Album*, xi. t. 493.

O. CRISPUM XANTHOTES, *Hort.*—A variety allied to *O. crispum hyperanthum*, the sepals being white spotted with yellow, and the petals pure white: lip also spotted with yellow.—*New Grenada*.

FIG.—*Lindenia*, vii. t. 312.

O. CRISTATELLUM, *Rehb. f.*—This species is allied to *O. cristatum*, and is a very rare plant. It has ovate pseudobulbs of moderate size, ligulate oblong acute leaves, and radical peduncles terminating in racemes of attractive flowers each $2\frac{1}{2}$ inches across, in which the roundish oblong-ovate sepals and petals, which are about of equal size, are yellow heavily blotched so as to be nearly covered with chestnut-brown; the lip is smaller oblong panduriform, apiculate, yellow at the base and chestnut-brown in front, furnished with subulate radiate calli on the disk, and a pair of lamellae standing before them. It flowers during the summer months.—*U. S. of Colombia*.

FIG.—*Orchid Album*, ii. t. 66.

SYN.—*O. Lehmanni*.

O. CRISTATUM, *Lind.*—A pretty compact-growing and free-flowering species. The pseudobulbs are conical, of a light shining green, and the leaves



ODONTOGLOSSUM CRISTATUM.

linear-lanceolate and very acute; the many-flowered radical scape bears a raceme of flowers, which are about $2\frac{1}{2}$ inches across, with lanceolate acuminate spreading sepals and petals, and a deflexed lip of the same form, furnished with a multi-partite crest, of which the anterior lobes are largest; the flowers are of a honey-like yellow, with dark brown blotches which nearly cover their whole surface, the petals being distinguished by zig-zag bars of yellow, and the base of the lip being white.

There are several varieties of this, some of which are very deficient in colour. Prof. Reichenbach has distinguished three (*Gardeners' Chronicle*, 1868, p. 1014),

namely: **ARGUS**, bright yellow with many purplish freckles and speckles, the lip white with purplish markings; **CANARIA**, canary-yellow with a single purplish blotch on each sepal and petal, the lip as in the preceding; and **DAYANUM**, a possible hybrid, with flowers of the normal colour.—*Peru, Ecuador.*

FIG.—*L'Ill. Hort.*, 3rd ser., t. 21 (*Argus*).

O. CRISTATUM LEHMANNI, *Regel.*—A variety differing from the type by its truncate, apiculate lip, which has two white crests at the base. It was discovered in Popayan, St. Martha, by Consul Lehmann, to whom it is dedicated.—*U. S. of Colombia.*

FIG.—*Gartenflora*, 1890, t. 1315, f. 2.

O. CROCIDIPTERUM, *Rchb. f.*—A species in the way of *O. naevium* and *O. odoratum*. The pseudobulbs are nearly elliptical, but tapering towards the apex, ancipitous, blunt at the edges, and in age become wrinkled all over but never furrowed; the leaves are longi-cuneate, ligulate acute; the flowers grow in branching spikes, and are pale yellow spotted with chestnut-brown, the lip having a large quadrate brown spot on its anterior part, and a smaller one of similar colour on each side of the calli; the flowers have a peculiar and not very agreeable odour. It flowers during the autumn months.—*New Grenada.*

FIG.—*Xenia Orch.*, ii. t. 192, ff. 5-9.

O. CUSPIDATUM XANTHOGLOSSUM, *Rchb. f.*—This is a very distinct and brilliantly coloured variety of *O. cuspidatum*—a species which has primrose-yellow sepals and petals, and a white cuspidate lip, all the parts blotched with dark brown; it produces long branching racemes of flowers, which are large and of a rich golden-yellow, the sepals and petals being blotched and barred with chestnut-brown, and the lip pandurate cuspidate, the edges very wavy and much toothed, yellow with a large reddish-brown blotch at the base. It flowers during March and April.—*U. S. of Colombia.*

FIG.—*Xenia Orch.*, ii. t. 184, ff. 1, 2 (*cuspidatum*); *Lindenia*, iii. t. 99 (*cuspidatum*); *Orchid Album*, ix. t. 390.

O. DELLENSE.—See *O. EXCELLENS DELLENSE.*

O. DENISONIAE, *Hort.*—A very fine *Odontoglossum*, named in compliment to Lady Londesborough, and certificated by the Royal Horticultural Society. It is supposed to be a natural hybrid between *O. crispum* and *O. luteo-purpureum* (*hystrix*), resembling the latter in its vigorous habit and in the shape of the flowers; the pseudobulbs are ovate, with a pair of oblong lance-shaped leaves, and the flowers, which grow in elongated racemes on radical scapes, are over 4 inches across, the sepals lanceolate acuminate, white with a few oblong pale purplish spots; the petals rather broader but acuminate and of a pure white; and the lip oblong blunt denticulate, with a pale yellow stain over the disk and a few spots of a rather darker purple; all the parts, the lip especially, being undulated at the edge.—*New Grenada.*

FIG.—*Floral Mag.*, 2nd ser., t. 26.

O. DICRANOPHORUM, *Rehb. f.*—This is believed to be another natural hybrid, perhaps between *O. triumphans* and *O. Lindleyanum*. "The flowers are in a lax raceme; the flower is equal to that of a good *O. triumphans*, yet already stated, all the parts are narrower; sepals linear, ligulate, acute, narrow light yellow, with two large brown areas; petals broader at the base, narrower at the acuminate apex, with one brown area in the middle, and some brown spots at the base; lip of the lightest yellow, unguiculate, unguis partly adnate to the column, then oblongo-elliptic till the middle, and finally suddenly contracted into a linear acute yellow mid-lobe, with a brown area in the middle; from base to centre projects a single broad, depressed callosity extending into two free, acipitous, thickish lamellae, which, with the superior callus, give the aspect of an old-fashioned two-pronged fork, whence the name" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 330).—*Ver. Grenada*.

O. DORMANNIANUM, *Rehb. f.*—A pretty little plant in the way of *O. moerhousii*. The pseudobulbs are small elliptic blunt two-edged and rugose, the leaves short narrow linear-lanceolate, and the stellate flowers in racemes; the sepals and petals are white or whitish spotted all over with reddish-brown, and the lip is white with a larger reddish blotch on the anterior part; the crest is white with two yellow areas on either side. It flowers in January.—*U. S. of Colombia*.

O. EDITHIAE, *Warner*.—A very distinct and beautiful plant of the *O. crispum* type, having flowers about the size of those of a large *O. Andersonianum*. The pseudobulbs are roundish or ovate compressed, the leaves oblong ligulate, and the scape bears a raceme of flowers, in which the slightly wavy sepals and petals are flushed with rose, marked by a few large transverse blotches of bright chestnut-red, and broadly margined with yellow; the petals have a white flame up the centre, and the chestnut spots are smaller, those towards the base confluent into irregular broken lines; the lip is somewhat hastate, deep yellow at the base, where there are about four longitudinal red lines, and a fringe of smaller transverse streaks on each side, the centre having two or three chestnut brown blotches, and the wavy margin and front portion pale primrose. It flowers in the spring.—*U. S. of Colombia*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 25.

O. EDWARDII, *Rehb. f.*—A species of great merit, and one that should be grown by everyone on account of its distinctness of colour and the delicious perfume of its flowers. It is a stout-growing plant, producing large pear-shaped pseudobulbs of a dark green colour. The flowers are produced in large thyrsoid panicles, and although small individually are nevertheless very effective on account of their being produced in profusion—literally by hundreds; they have the sepals and petals bright violet-purple, the sepals asperous on the outer surface, and the lip of the same colour with a bright yellow base. The flowers of this species, which have a delicious perfume of violets, are produced in February and March. We saw this plant well flowered in the collection of Baron Sir J. H. W. Schröder, The Dell, Staines, under the care of the gardener, Mr. Ballantine.—*Ecuador*.

FIG.—*Journ. of Hort.*, 1887, xiv. p. 415, f. 72; *L'Orchidophile*, 1391, p. 241; *Reichenbachia*, i. t. 26; *Bot. Mag.*, t. 6771; *Orchid Album*, x. t. 465.

O. ELEGANS, *Rehb. f.*—This most distinct plant was imported with a batch of *O. cirrhosum*, of which species it is doubtless a natural hybrid, resembling it as it does not only in the shape of its flowers, but also in its habit of growth and in its paniculate inflorescence. Its other parent is supposed to be *O. cristatum*. The lanceolate acuminate sepals and broader caudate petals are yellowish white, and are marked with a number of dark chocolate spots and blotches, so as to become almost covered, the sepals especially so; the lip is hastately triangular caudate, with two long serrated keels on the disk, pale yellow at the base, white in front, having a large rich brown blotch in the centre and one or two spots towards the apex; the crest is deep yellow, the column white with chocolate markings. It flowers in May. This plant is well flowered by M. Vincent, gardener to M. le Comte A. de Germiny, Gouvville, France, where we have seen it with large many-branched spikes.—*Ecuador*.

FIG.—*Orchid Album*, iii. t. 111; *Veitch's Man. Orch. Pl.*, i. p. 73.

O. ELEGANTIUS, *Rehb. f.*—Believed to be a natural hybrid between *O. Pescatorei* and *O. Lindleyanum*. The late Professor Reichenbach described it thus:—"The sepals and petals are smaller than those of a strong *O. Lindleyanum*, lanceolate acute, sulphur-coloured with brown marks, a single one on the lateral sepals; lip trifid, side laciniae rectangular in the middle, central lacinia cuneate oblong apiculate, with a long callus extending from the disk between the mid-lacinia, and with two diverging, retuse, emarginate shanks at the base of the mid-lacinia; the colour is the same as the sepals, as also is that of the column" (*Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 201).—*Ocaña, U. S. of Colombia*.

O. EUASTRUM, *Rehb. f.*—A beautiful thing, allied to *O. Brassia*, and described as follows:—"The prevailing colour is white; there are some mauve spaces in long stripes on the sepals, and still more outside. A few spots, one to five, are to be seen on the sepals; they are cinnamon inside, mauve outside. Petals simply white. The lip is quite peculiar and characteristic. It is rather heart-shaped over its stalk, nearly semi-circular, toothletted outside. An abrupt long lanceolate lacinia projects from its centre. The denticulate indurate sessile lamellae, like those of *O. crispum*, stand at the base of the lip. They are sepia-brown in colour. Three keels stand before the side, one conspicuously bidentate, the central one simply acute and very small. Some brown small spots are scattered over the disk, and the base of the anterior lacinia white; the disk around the callus is sulphur-coloured. The column has lobed wings, is light yellowish-white, with a mauve back" (H. G. Reichenbach, in *Gardeners' Chronicle*, 1887, 3rd ser., ii. p. 71).—*Native country not stated*.

O. EUGENES, *Veitch*.—A magnificent plant, which first flowered in this country in the collection of the Duke of Sutherland, at Trentham. It is a magnificent evergreen plant, with bright green foliage; the inflorescence is arched, and many-flowered, producing a grand effect when the blossoms are expanded. The flowers are 4 inches across, and of a bright showy and pleasing colour; the sepals and petals are of a pale yellow, distinctly margined and tipped with deep yellow, the centre and base of the petals white, both sepals and petals being heavily blotched with chestnut-brown; lip white with yellow

crest, and a large blotch of chestnut-brown in the centre, while the column is white. The flowers are produced during the months of June and July, and last in full perfection for six weeks.—*New Grenada*.

FIG.—*Orchid Album*, viii. t. 355.

O. EXCELLENS, *Rehb. f.*—This 'wonderfully fine' plant is thought to be a natural hybrid between *O. Pescatorei* and *O. tripudians*. The flowers are rather broader than those of the latter; the sepals yellow with a few purple blotches, the dorsal one white in the centre; the petals much broader, white, having yellow margins; and the lip pandurate, emarginate, apiculate, white, having numerous small purple blotches on the sides and a few larger purple blotches on the front; the crests are yellow, and consist of two long divaricate keels, one on each side of a central line, the keels having one tooth at the back and another at the end, while on each side stands a series of curved teeth. It flowers during the summer months.—*New Grenada*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 19; *L' Ill. Hort.*, xxxiii. t. 591.

O. EXCELLENS CHRYSOMELANUM, *Rehb. f.*—A variety which originated in the collection of Sir Trevor Lawrence, Bart. "It is spotted all over, and has neither a white disk on the upper sepal nor on the petals, while the lip and the column also are yellow" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 522).—*New Grenada*.

O. EXCELLENS DELLESE, *Rolfe*.—A natural hybrid, probably between *O. Pescatorei* and *O. praeinlens*, as suggested by Mr. O'Brien, who thus describes it in the *Gardeners' Chronicle*, 3rd ser., 1891, ix. p. 521:—"Flowers nearly 3 inches across, fragrant; the sepals slightly under, and the petals over $\frac{3}{4}$ inch wide, the former appearing narrower by turning back when mature, and the latter remaining flat; sepals and petals white at the base, rich yellow towards the tips, their entire surface, except the tips and a narrow margin, spotted and banded with purplish-brown, the markings being in smaller spots near the column, and increasing in size on the outer portions of the segments; lip irregularly ovate, slightly pandurate, toothed at the margin, white tinged with yellow down the middle, and with several rich brown blotches round the crest, and some smaller spots at the sides of the basal portion of the lip. Flowered in the garden of Baron Sir J. H. W. Schröder, The Dell, Egham."—*New Grenada*.

FIG.—*Lindenia*, vii. t. 335; *Journ. of Hort.*, 1891, xxii. p. 341, f. 63.

SYN.—*O. dellense* (O'Brien).

O. FALCIPETALUM.—See *O. CARINIFERUM*.

O. FITCHIANUM, *Warner*.—A natural hybrid, probably between *O. crispum* and *O. gloriosum*, and dedicated to Mr. J. N. Fitch, the artist. Sepals and petals narrow acuminate, the former rosy-purple heavily blotched with brownish-purple, the latter white streaked with pale rosy-purple, with several purplish-brown spots and dots; lip white with one large and a few small spots of purplish-brown. Flowered in the collection of Robert Warner, Esq., of Chelmsford.—*U. S. of Colombia*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 34.

O. GALEOTTIANUM, *A. Rich.*—This plant is nearly allied to *O. nebulosum*, and also in its growth and its pseudobulbs resembles *O. Cerrantesii*, so that it may possibly be a hybrid between these two species. The flowers are produced in short racemes, three or more on each, and are white, with the exception of the petals, which are transversely barred with brown at the base; the triangular sub-crispate lip is white, with a few streaks of yellow near the base, and having a three-lobed white callus. It is still a rare plant.—*Mexico*.

FIG.—*Rich. Orch. Mex.*, t. incl. 89; *Orchid Album*, ix. t. 423.

O. GLORIOSUM, *Linden et Rehb. f.*—This species appears to seed very freely in its native country and produces numberless varieties, of which some are more ornamental than others. It is a plant of good constitution, easily grown, travels well, and flowers in the summer or show season. The pseudobulbs and leaves resemble those of *O. crispum*, and the plant bears a long branched inflorescence; the flowers vary much in size and colour, but are mostly yellow, sometimes clouded with green, and always spotted with lively chestnut-brown; they are stellate, with oblong-ligulate acuminate sepals and petals, the former having a few larger, the latter more numerous smaller spots on the basal half, and a lip which is cordate at the base, ligulate acuminate upwards, angulate towards the base, and having just above the crest a solitary irregular brown blotch. This plant is very fragrant, with a powerful hawthorn-like scent.—*New Grenada*.



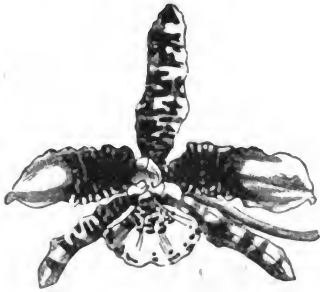
ODONTOGLOSSUM GLORIOSUM.

FIG.—*Batem. Mon. Odont.*, t. 12; *Gard. Chron.*, 1865, p. 578, with fig.

O. GODSEFFIANUM, *Rolfe*.—One of the numerous natural hybrids, which is described by Mr. Rolfe as follows:—"It is very handsome, and appeared with Messrs. F. Sander & Co., of St. Albans, last May. It was at once pronounced to be a natural hybrid between *O. triumphans* and *O. Lindleyanum*. It might be described as *O. triumphans* with acuminate segments and the lip of *O. Coradinei*, its resemblance to the latter being due to the fact that both are derived from *O. Lindleyanum* on the one side. In *O. Coradinei*, however, the other parent is *O. crispum*, while in the present hybrid, *O. triumphans* stands in this relation. In almost every respect it is remarkably intermediate in character, and its relation to each parent is seen at a glance. Both parents have a very long column,

in which our hybrid also agrees; the wings, however, like the tip, are nearer to *O. Lindleyanum* than to *O. triumphans*, though respecting the sepals and petals just the reverse may be said" (*Gardeners' Chronicle*, 3rd ser., 1891, x. p. 728).—*New Grenada*.

O. GRANDE, Lindl.—This species is well named *grande*, for it is indeed the finest of the genus, and one of the most showy Orchids in cultivation; it is a grand old plant, a universal favourite, which no collection should lack. It has



ODONTOGLOSSUM GRANDE.
(Much reduced.)

ovate-oblong compressed ancipitous pseudobulbs, with a pair of broadly ovate striated wavy leaves, and a two- to seven-flowered erect scape springing from the base of the bulbs, and bearing the very large gaily-coloured flowers, which measure from 5 to 7 inches across, and are developed during the autumn months; the sepals are oblong-lanceolate, yellow, transversely blotched with irregular bands of chestnut-red; the petals are broader, oblong, with a single obcordate spot of chestnut-red over the lower two-thirds, the rest being clear bright yellow; the lip is roundish, emarginate, unguiculate, creamy-white, with a few concentric bands of chestnut-red in front of the disk, and dotted with irregular-shaped pale reddish-brown spots around the edge. It remains in perfection for three or four weeks, if the flowers are kept dry. The plant should be grown in a pot.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 3955; *Batem. Orch. Mex. et Guat.*, t. 24; *Id.*, *Mon. Odont.*, t. 8; *Flore des Serres*, t. 21; *Parton, Mag. Bot.*, viii. p. 49, with tab.; *Jennings, Orch.*, t. 13; *Annales de Gand*, 1845, t. 37; *Gartenflora*, t. 270; *Orchid Album*, ii. t. 79; *Hartinger, Parad.*, i. t. 13; *Hook. First Cent. Orch. Pl.*, t. 80; *Lindenia*, ii. t. 75; *Veitch's Man. Orch. Pl.*, i. pp. 33 and 34; *Reichenbachia*, ii. t. 60.

O. GRANDE MAGNIFICUM, Williams.—This variety in its habit of growth resembles the type, but it bears sixteen flowers upon one scape, and these measure 7 inches in diameter, and have the most splendid and brilliant markings; the lip is also large in proportion. We saw this plant, which well deserves the name of *magnificum*, in the collection of the late T. Dawson, Esq. With it there were in bloom from ninety to a hundred plants of *O. grande*, forming a really beautiful display.—*Guatemala*.

O. GRANDE PALLIDUM.—See *O. SCHLIEPERIANUM*.

O. HALLII, Lindl.—A very charming and beautiful species belonging to the *O. luteo-purpureum* section, but having flowers far superior and more beautiful than those of any variety of that species. The pseudobulbs are ovate acuminate ancipitous, about 3 inches high; the leaves ensiform, upwards of a foot long, and 2 inches broad, light green, and the scape many-flowered, produced from the base of the bulbs; the flowers measure about 4 inches across, the sepals and petals being ovate-lanceolate acuminate, buff-yellow, heavily blotched and the petals barred near the base with purplish-brown; and the large oblong acuminate lip is white with a rich yellow throat streaked with orange and white, the surface

blotched with purplish-brown, the margin white and beautifully fringed; there is a large multi-partite crest at the base of the lip. This plant is sometimes called by the varietal name *leucoglossum* to distinguish it from the other forms,



ODONTOGLOSSUM HALLII.
(From the *Gardeners' Chronicle*.)

but as it represents the type of the species which had a white lip, this name is quite supererogatory.—*Peru*; *New Grenada*, elevation 8,500 feet.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 10; *Batem., Mon. Odont.*, t. 21; *L'Ill. Hort.*, 3rd ser., t. 58; *Floral Mag.*, t. 378; *Gard. Chron.*, 1865, p. 962, with fig.; *Xenia Orch.*, i. t. 63, f. 1; *Bot. Mag.*, t. 6237 (pectinate column wings); *Gard. Chron.*, N.S., 1886, xxv. p. 140, f. 26; *Lindenia*, iv. t. 158; *Veitch's Man. Orch. Pl.*, i. p. 35.

O. HALLII MAGNIFICUM, *Hort.*—A fine variety, having the sepals rich chocolate-brown, with yellow tips and a few lines of the same colour; the broad lip is lacerated or fringed at the margin, yellow blotched with brown; petals yellow, with a pair of deep brown blotches. It was exhibited on June 16th, 1888, by H. M. Pollett, Esq., of Bickley.

FIG.—*Gardening World*, iv. p. 661.

O. HALLII XANTHOGLOSSUM, *Rchb. f.*—A very beautiful and distinct variety having large flowers, with broad sepals and petals, the colour of which is a

bright yellow heavily blotched and spotted with chestnut-brown; the lip is large and broad, bright yellow spotted with reddish-brown. This variety forms an effective companion for the white-lipped *O. Hallii*. It flowers during the spring and summer months.—*Peru*.

FIG.—*Reichenbachia*, i. t. 28.

O. HARRYANUM, *Rehb. f.*—An extraordinary species, which, when introduced in 1886, came as a great surprise to the Orchid growers of this country. The particular spot in the United States of Colombia where it grows has been many times visited by Orchid collectors, and it is surprising that such a beauty should have been overlooked. It is an evergreen species, with oblong, ovate, compressed pseudobulbs, smooth when young, becoming furrowed with age, 3 inches or more high, pale green; leaves produced in pairs, 6 to 12 inches long, somewhat coriaceous; scape erect, many-flowered; flowers 3 to 5 inches in diameter; sepals elliptic-oblong, broader than the petals, deep chestnut-brown, transversely streaked and bordered with either rich yellow or greenish-yellow; petals oblong and curved, deep chestnut-brown, longitudinally striped in the basal halves with purplish-mauve and margined with yellow; the lip is most extraordinary both in shape and colour; it is large, oblong-oval, three-lobed; lateral lobes curved upwards, ground colour white, heavily streaked with feathery lines of bluish-purple, the crest being much fringed and of a rich deep yellow; anterior lobe somewhat cordate, pure white, which soon changes to yellow. It was first introduced by Rodriguez Pautosha, who sent it to Messrs. Horsman & Co., of Colchester. It blooms at different seasons of the year, and we find the temperature of the *Cattleya* house suits it best.—*U. S. of Colombia*.

FIG.—*Gard. Chron.*, 3rd ser., 1887, ii. p. 169, f. 41; *Journ. of Hort.*, 1887, xv. p. 87, f. 9; *The Garden*, 1888, xxxiii. p. 76, t. 633; *Orchid Album*, viii. t. 366; *Reichenbachia*, ii. t. 49; *Lindenia*, iii. t. 142; *Veitch's Man. Orch. Pl.*, i. p. 37; *L'Orchidophile*, 1890, p. 209 (plate); *Revue Hort. Belge*, 1893, p. 39, t. 4.

O. HARRYANUM FLAVESCENS, *Rolfe*.—This distinct variety was first flowered by the late A. Wilson, Esq., of Sheffield. "The sepals are deep yellow, the petals similar but with white veins near the base, the lip pale primrose with base and crest deep yellow."—*U. S. of Colombia*.

O. HARRYANUM, *Mr. Wilson's variety*.—A handsome and distinct variety, which flowered in the collection of Robert Wilson, Esq., of Mayfield, Falkirk. "The sepals are intense blackish-maroon, the yellow transverse markings and the yellow margin being almost entirely absent, while the same may be said of the petals; in the lip the maroon markings of the side lobes are more pronounced than usual" (R. A. Rolfe, in *Gardeners' Chronicle*, 3rd ser., 1888, iii. p. 522).—*U. S. of Colombia*.

O. HARRYANUM PAVONIUM, *Rehb. f.*—This novelty was first flowered by Messrs. J. Backhouse & Son, of York. "The ground-colour may be called Indian-purple; the sepals, which prove even more curious than the petals, have wood markings of angulate circles and bars of ochre-colour; where they are broadest there are certain lighter brown lines in the centre of the ochre-coloured ones; the petals are similar, but the much broken lines are narrower

and without the inner colour and without circular markings; the markings may be compared to those of the peacock, though the colours are different. It has a delightful perfume" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1889, v. p. 428).—*U. S. of Colombia*.

O. HASTATUM.—See *ONCIDIUM HASTATUM*.



ODONTOGLOSSUM HARRYANUM.
(From the *Gardeners' Chronicle*.)

O. HASTILABIUM, Lindl.—A handsome pleasing and fragrant Orchid, which produces its flowers in June, July, and August, their colours being purple, green, and white. It continues blooming for two months if kept in a cool house. The pseudobulbs are oblong compressed, ribbed, bearing a pair of linear-oblong

obtuse leaves, and from the axil of an accessory leaf at its base a panicle of fragrant flowers, some 3 inches in diameter, with the linear lanceolate acuminate undulated sepals and petals pale green barred transversely with thin purple lines, and the broadly hastate lip having the basal part purple, triangular, with two acute side lobes, and the front part white, roundish, ovate, acute; the purple part bears a crest of five irregular lamellae. This is a useful plant for exhibition, on account of its continuing so long in bloom.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 4272 (not t. 4919, which is *cariniferum*); *Batem. Mon. Odont.*, t. 7; *Psacatorea*, t. 11; *Lindenia*, v. t. 213; *Veitch's Man. Orch. Pl.*, i. p. 38; *L'Orchidophile*, 1892, p. 144 (plate); *Orchid Album*, ix. t. 425.

O. HASTILABIUM FUSCATUM.—See *O. CARINIFERUM*.

O. HEBRAICUM, *Rchb. f.*—This very beautiful and distinct *Odontoglossum*, supposed to be a natural hybrid, has elongate ovate compressed pseudobulbs, ligulate oblong leaves, and dense racemes or panicles of showy stellate flowers, of which the ovate lanceolate acuminate sepals and petals are pale yellow, and are striped and heavily spotted with chestnut-brown, the markings being suggestive of Hebrew characters; the hastate lip is yellow, darker at the base, where it is marked by short radiating lines of crimson, the front part undulate and acuminate, and having a large cordiform blotch of maroon-brown. It flowers in the summer months.—*New Grenada*.

FIG.—*Orchid Album*, v. t. 194; *Reichenbachia*, i. t. 37.

O. HEBRAICUM LINEOLIGERUM, *Rchb. f.*—An interesting variety of the preceding, first flowered by C. Winn, Esq., of Birmingham. The flowers when they first open are pale yellow, changing with age to creamy-white, distinctly marked with longitudinal bars and oblong blotches of purple-crimson, the margins and tips unspotted; the lip is elongate triangular acuminate wavy pale-yellow, having three or four purple-crimson spots variously disposed on its anterior part; on the disk are a pair of prominent divergent crests, the area which surrounds them being deep yellow. It flowers during the summer months.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 85.

O. HENNISII, *Rolfe*.—An interesting species, collected by Mr. Hennis. "It closely resembles *O. odoratum*, but its real affinity is with *O. crinitum*, as the shape of the lip is very similar in the two, while both possess a peculiar bearded crest, consisting of numerous filiform or thread-like hairs."—*Peru, Ecuador* (?)

O. HINNUS, *Rchb. f.*—A curious plant with "spider-like" flowers. "Sepals and petals narrow lanceolate, undulate, yellow and cinnamon-coloured; the narrow lip is yellow and cinnamon-coloured, acuminate from a rather narrow sub-hastate base." It first flowered in the collection of the late J. Day, Esq.—*Native country not stated*.

O. HISTRIONICUM, *Rchb. f.*—A lovely natural hybrid of the *luteo-purpureum* section, which was first flowered by Baron Sir J. H. W. Schröder. It is described in the *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 512:—"The ground colour of the sepals and wavy toothletted rose petals is a whitish, lightest, undecided ochre; a most elegant border of deep sepia-cinnamon spots runs



ODONTOGLOSSUM
(From the *Garden*)



UM HEBRAICUM.
(deners' Chronicle.)

around the sepals and petals. The disk of the sepals shows a few larger, partly-lobed, sepia-cinnamon spots; the disk of the petals is adorned with a greater number of smaller ones. The lip is rhomboid, very broad, acuminate, toothletted, angulate, broken on the superior half so as to appear caudate, yellow, with some sepia-cinnamon blotches and marks. Column angulate, with very small dolabriform wings, light ochre-yellow, with brown marks."—*New Grenada*.

O. HOOKERIANUM.—See *O. CORDATUM*.

O. HORSMANNI, *Rchb. f.*—A very beautiful and distinct plant, supposed to be a natural hybrid between *O. Pescatorei* and *O. luteo-purpureum*. The pseudobulbs are pear-shaped, compressed; the flowers are of good form, well filled up, and very ornamental; the sepals and petals yellowish-white blotched with cinnamon; the lip broad, yellowish-white, with a large yellow disk blotched with cinnamon. It was discovered by Mr. Frederick Horsman. When the many-flowered racemes of this (*Odontoglot*) are well developed, as we have frequently seen them, the effect they produce is highly pleasing. The plant blooms during the winter months.—*New Grenada: Ocaña*.

FIG.—*Gardening World*, vi. p. 573.

O. HRUBYANUM.—See *O. CIRRHOSUM HRUBYANUM*.

O. HUMEANUM, *Rchb. f.*—A very pretty Orchid, supposed to be a wild cross between *O. cordatum* and *O. Rossii*. It is named in honour of the late W. B. Hume, Esq., in whose collection it flowered for the first time. The inflorescence is two-flowered; the flowers have the sepals triangular acuminate, keeled behind, yellow striped with bars of cinnamon-brown, the oblong acuminate crispulate petals white, with three sepia-brown blotches at their base, and the cordate-ovate acute crenulate lip white, with a two-lobed yellow callus striped with red on its disk.—*Mexico*.

FIG.—*Reichenbachia*, ii. t. 82.

O. HUNNEWELLIANUM, *Rolfe*.—A small-growing species, discovered by Mr. Oscar Bobisch, near Bogota; it somewhat resembles *O. Schillerianum*. Flowers about 2 inches in diameter; sepals broadly lanceolate acute, light yellow spotted with brown; petals paler, but similarly marked; lip obovate-elliptical, white spotted with brown.—*New Grenada*.

O. HYSTRIX.—See *O. LUTEO-PURPUREUM*.

O. IMSCHOOTIANUM, *Rolfe*.—This interesting plant was first flowered by M. A. van Imschoot, of Ghent, in May, 1889, and is probably a natural hybrid between *O. Lindleyanum* and *O. tripudians*. The sepals and petals are like those of the former, but the markings are more purple in colour, as is also the lip, which is, however, broader than in that species, the crest and markings being nearer to those of *O. tripudians*.—*Native country not stated*.

O. INSLEYI, *Lindl.*—This noble plant has very much the aspect of *O. grande*. It has ovate compressed pseudobulbs, from which grow a pair of broad oblong-

ensiform leathery leaves, and at their base an erect scape bearing some eight or ten flowers, each 3 inches across, the oblong slightly wavy, sepals and petals being of a pale yellow, thickly transversely blotched with rich chestnut-brown; the lip is narrow obovate retuse, smaller than that of *O. grande*, bright yellow, with a row of crimson spots around the margin. It is further distinguished by the presence of a pair of red subulate horns or cirrhi on the column. The flowers are produced at different times of the year, lasting in beauty three weeks. The variety *macranthum* of Lindley (*O. Lawrenceanum*, Hort.), which has flowers $3\frac{1}{2}$ inches across, differs in the lip wanting the row of marginal spots, and in having a dark-coloured base with a yellow crest.—*Mexico*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 25; *Journ. Hort. Soc.*, viii. p. 55, with fig. (*macranthum*); *Batem. Orch. Mex. et Guat.*, t. 21; *Id., Mon. Odont.*, t. 4; *Flora de Serra*, t. 62; *L'Orchidophile*, 1885, p. 68 (plate); *Veitch's Man. Orch. Pl.*, i. p. 40.

O. INSLEAYI AUREUM, Hort.—A very distinct and handsome variety, which differs from the type in having yellow sepals and petals; the lip is also yellow, sometimes faintly spotted around the margin with orange.—*Mexico*.

FIG.—*Lindenia*, viii. t. 359 (*Imachootianum*). (???)

SYN.—*O. Insleayi Imachootianum*.

O. INSLEAYI LEOPARDINUM, Hort.—A very beautifully marked variety. The sepals and petals broader than the type, reddish-brown, spotted and margined with yellow. The most distinct feature of this variety lies in the bright yellow lip, which is margined with a series of brilliant red spots; the effect of these on the yellow is very charming.—*Mexico*.

FIG.—*Gartenflora*, 1876, t. 856; *Revue Hort. Belye*, 1888, p. 61 (plate).

O. INSLEAYI PANTHERINUM, Rehb. f.—A wonderful variety, remarkable for its numerous very dark red blotches on the yellow lip; sepals and petals chestnut-brown with paler margins.—*Mexico*.

O. INSLEAYI SPLENDENS, Rehb. f.—A very splendid variety, in which the large flowers are $4\frac{1}{2}$ inches across, and of fine substance, from four to six blossoms being produced on a scape during the months of October and November. The sepals and petals are rich shining brown, tipped and edged with yellow, and the lip is large, yellow, spotted with brilliant carmine, and having deep orange-yellow crests. It is one of the showiest *Odontoglossa* with which we are acquainted, and is extremely rare.—*Mexico*.

FIG.—*Orchid Album*, v. t. 215; *Reichenbachia*, i. t. 7; *Gard. Chron.*, N.S., 1886, xxv. p. 305, f. 57.

O. IOPLOCON, Rehb. f.—This distinct species produces its flowers in branched panicles, after the style of *O. ramosissimum*. The sepals and petals are, however, narrower than those in that species, mauve in colour and wavy; the lip is furnished on each side at the base with a projecting, blunt, divaricate angle; the mid-lacinia being linear-triangular and having a peculiar system of orange calli at the base, white at the apex. Prof. Reichenbach suggests that "if it be a mule it might be derived from *O. Edwardii* and *O. ramosissimum*."—*Native country not stated*.

O. JOSEPHINAE, *Williams*.—A lovely gem, which flowered in the collection of R. H. Measures, Esq., of Streatham, to whose youngest daughter it is dedicated. The pseudobulbs are clustered, oblong, compressed, pale green, diphyllous; leaves broadly ligulate-oblong, acute; scape radical, springing from the axil of accessory leaves, tinged with reddish-brown, and supporting a nodding distichous raceme of numerous flowers. Flowers distinct and showy, the perianth stellately spreading, about 3 inches in depth, and nearly as much in breadth, white, suffused slightly with rose in the centre, marked with bright chocolate-red spots. Sepals lanceolate acuminate, slightly wavy at the edge, white, with a few large oblong spots of chocolate-red in the lower half, the upper part unspotted; petals rather broader and shorter and also more undulated than the sepals, white, spotted with somewhat smaller and more numerous crowded spots of chocolate-red about half-way up, the base marked by three parallel blunt linear-clavate bars of the same colour. Lip with the front portion deflexed, oblong, with a cordate base, an undulated margin, and a recurved apiculate apex. The side or basal lobes are erect, longitudinally striped with chestnut-red on a whitish ground.—*New Grenada*.

FIG.—*Orchid Album*, iv. t. 188.

O. KRAMERI, *Rehb. f.*—A rather pretty dwarf-growing species, in which the pseudobulbs are compressed, with sharp edges, in some specimens roundish, in others ovate, pale green, bearing a single leaf. The peduncles are freely produced from the base of the bulbs, and are pendulous, bearing several flowers; the sepals and petals are ligulate obtuse, and the lip somewhat reniform, deeply notched in front; the whole flower being of a charming violet colour, and the lip, in addition, being marked and spotted with yellow and purple, and having two lines of rich dark brown near the column. It is a good addition to this numerous family, and should be grown in peat and sphagnum moss, but will require a little more warmth than the generality of the genus, and it will be found that the temperature of the *Cattleya* house will suit it best.—*Costa Rica*.

FIG.—*Gard. Chron.*, 1868, p. 98, with fig.; *Bot. Mag.*, t. 5778; *Floral Mag.*, t. 406; *Batem. Mon. Odont.*, t. 24; *Orchid Album*, i. t. 40; *Gard. Chron.*, N.S., 1886, xxv. p. 756, f. 166; *L'Ill. Hort.*, xxxii. t. 562.

O. KRÄNZLINII, *O'Brien*.—We have not seen this new species, so we prefer to give the original description of Mr. J. O'Brien in the *Gardeners' Chronicle*, April 15, 1893:—"This pretty new species has much the same form and manner of marking in the flowers as *O. elegans*; the form of the labellum and its crest partakes somewhat of the arrangement of the same organ in *O. naevium*, while the downy or velvety reddish-brown blotch in the middle of the labellum is suggestive of *O. Schillerianum*. . . . The flowers are about 2 inches across, sepals and petals nearly equal, lanceolate, and with a tapering thin point; pale yellow blotched with reddish-brown; lip lanceolate apiculate, white with a velvety reddish-brown blotch in the centre and a few purple spots at the sides. It was imported and flowered by Messrs. F. Sander & Co."—*U. S. of Colombia*.

O. LAEVE, *Lindl.*—A pretty and variable species, of free-growing habit, with ovoid compressed pseudobulbs, a pair of elongate lorate obtuse leaves, and a panicked inflorescence of rather large and showy flowers, in which the sepals and petals are oblong linear, acute, flat, yellowish-green transversely banded with

chocolate-red (sometimes yellower with cinnamon-red markings); the lip pandurate, deflexed from near the base, which is pale lilac-purple, and the emarginate mucronate apex white; the crest consists of only two slight almost obsolete ridges on the disk, whence the name *laeve*. Being a very abundant bloomer, it should become generally cultivated, especially as it will thrive under the very coolest treatment.—*Mexico*.

FIG.—*Bot. Reg.*, 1844, t. 39; *L'Ill. Hort.*, t. 213.

O. LAEVE REICHENHEIMII, *Moore*.—This fine plant so closely resembles *O. laeve* as to be scarcely distinguishable. It is a strong free-growing and handsome variety, sending up its branched panicle some 2 or 3 feet in height, and bearing a profusion of attractive flowers; the sepals and petals are yellowish-green barred with purplish-brown, and the lip varies very much in colour, in some varieties being quite dark, and in others a light purple. In this plant the lip is not deflexed as in *laeve* itself. When well grown it makes a fine specimen.—*Mexico*.

FIG.—*Pescatorea*, t. 19; *Warner, S.I. Orch. Pl.*, ii. t. 16; *Batem. Mon. Odont.*, tt. 15, 16.

SYN.—*O. Reichenheimii*.

O. LANCEANS, *Rchb. f.*—This species was established in 1888 by Reichenbach to include a number of *Odontoglossums* of probable hybrid origin between *O. crispum*, *O. gloriosum*, and *O. odoratum*, of which large numbers have been introduced during the last few years: *O. Andersonianum*, *O. Jenningsianum*, *O. baphicanthum*, *O. hebraicum*, *O. Brassia*, *O. deltoglossum*, *O. Leeanum*, and *O. Ruckerinum*, which are according to him secondary types of one primary type, i.e., *O. lanceans*. We fully agree with the learned professor in the course he adopted, as it is clear that many of these so-called species of hybrid origin are not worthy of that rank, but for garden purposes and to save confusion we think it, however, not advisable to give here this new style of nomenclature.—*U. S. of Colombia*.

O. LAWRENCEANUM.—See *O. INSLEAYI*.

O. LEEANUM, *Rchb. f.*—A very distinct and handsome plant, probably a wild hybrid, named in honour of W. Lec, Esq., Downside, Leatherhead. The pseudobulbs are ovate compressed diphyllous, the leaves oblong ligulate acute, and the scape radical, bearing an erect many-flowered raceme. The flowers are of the stellate form, $3\frac{1}{2}$ inches across; the sepals and petals are lanceolate acuminate, bright yellow margined with orange, and spotted all over with small dots of rich reddish-brown, the petals having each an open eye-like spot of clear yellow; the oblong acuminate lip is pale yellow, deeper at the base and apex, having a large brownish-crimson blotch towards the front, and a few marginal spots; the disk bears a thick linear keel, which extends into two rhomboidal toothletted lamellae. It flowers during the winter months.—*New Grenada*.

FIG.—*Orchid Album*, iii. t. 101.

O. LEHMANNI.—See *O. CRISTATELLUM*.

O. LEROYANUM.—See *O. WILCKEANUM LEROYANUM*.

O. LIETZEI AUREO-MACULATUM, *Regel.*—A superior variety in every respect, differing from the type in having the flowers with broader segments, and being spotted brown on a golden-yellow ground. It flowered in the Botanic Garden, St. Petersburg. Blooms in March.—*Brazil.*

FIG.—*Gartenflora*, 1888, t. 1279.

O. LILIIFLORUM.—See *O. RAMOSISSIMUM LILIIFLORUM.*

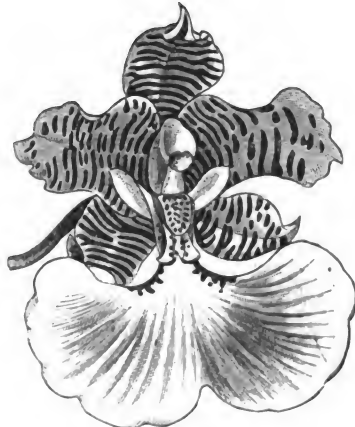
O. LINDENI, *Lindl.*—A stout-growing species, which was first flowered by the late H. J. Buchan, Esq., of Southampton. The plant has tall pear-shaped pseudobulbs, erect ensiform leaves nearly a foot long, and a flower scape 2 to 3 feet high, the uniform lateral branches bearing five to seven flowers, which form a regular unilateral series directed upwards. The flowers are about $1\frac{1}{2}$ inch across, of a uniform lemon-yellow, the sepals and petals clawed lanceolate acute and much undulated, the lip ovate lanceolate with an angular base, and a crest of two terete calli, which are emarginate in front. It blooms during the summer months.—*New Grenada.*

FIG.—*Floral Mag.*, 2nd ser., t. 333.

O. LINDLEYANUM, *Rchb. f. et Warscew.*—A distinct though not showy species, with ovate oblong compressed pseudobulbs, linear lanceolate acute leaves, and slender flexuose peduncles bearing a raceme of stellate flowers, which measure about 3 inches in depth, and consist of linear lanceolate acuminate sepals and petals, cuneate at the base, yellow with an elongate bar of cinnamon-brown over $\frac{1}{2}$ inch long at the base, followed by a large roundish spot of the same, the apex speckled with small dots; the lip, which is prominent, and three-lobed in the middle part, has the base connate with the horned column, and the projected front part deflexed linear lanceolate, brown with a long yellow tip, the disk with two pairs of falcate lateral lobes, which are white and very long.—*New Grenada.*

FIG.—*Xenia Orch.*, i. t. 71; *Batem. Mon. Odont.*, t. 11.

O. LONDESBOROUGHIANUM, *Rchb. f.*
—This is one of the most distinct and brilliantly coloured of the *Odontoglots*. The plant though epiphytal is deciduous, losing its ligulate acute foliage in winter; the pseudobulbs are oblong ovate, glaucous green, furrowed in age; and the flower scapes grow from 3 to 6 feet in length, producing flowers towards their upper end; the oblong sepals and ovate petals are concave, wavy, yellow regularly cross-barred with reddish-brown, the basal markings arranged concentrically; the lip has a long yellow claw, two conspicuous erect yellow auricles, and a flat transversely reniform limb of a bright yellow,



ODONOTOGLOSSUM
LONDESBOROUGHIANUM.

1½ inch broad, and very effective. It produces its blossoms during the autumn months.—*Mexico*.

FIG.—*Orchid Album*, ii. t. 82; *Floral Mag.*, 2nd ser., t. 246; *L'Ill. Hort.*, 1883, xxx. t. 497.

O. LUNATUM.—See *ASPASIA LUNATA*.

O. LUTEO-PURPUREUM, *Lindl.*—The numerous varieties of this magnificent plant have given rise to many names, but most growers of Orchids are now satisfied that these represent only varieties; still, as such, they are well worthy of a place in every collection. The typical form has thick oval compressed pseudobulbs 2 to 3 inches long, ensiform leaves 2 feet long, and flowers 3 inches or more across, in racemes which issue from the side of the bulbs, and grow 1 yard high; the sepals and petals are broadly lanceolate, the latter fringed, all almost wholly covered by an oblong blotch of bright chestnut-brown, the margins and tips being yellow; the lip is yellowish-white with reddish-brown spots, obovate, four-lobed, and fimbriate, emarginate, the multifidly pectinate crest being deep yellow.—*New Grenada*, altitude 7,000 to 8,000 feet.



ODONTOGLOSSUM LUTEO-PURPUREUM.
(From the *Gardeners' Chronicle*.)

with a large chestnut-brown patch in front of the crest; the edge of the labellum is exquisitely crimped, folded, and toothed, and the margin is further decorated with crimson spots. It flowered with Walter Cobb, Esq., Silverdale, Sydenham."—*New Grenada*.

FIG.—*Batm. Mon. Odont.*, t. 17; *Gard. Chron.*, 1865, p. 746, with fig. (*radiatum*); *Id.*, N.S., xxi. p. 585, ff. 114, 115; *Id.*, 1886, xxv. p. 76, f. 13 (*radiatum*), p. 140, f. 27; *Lindenia*, ii. t. 58; *Id.*, iv. t. 162 (*radiatum*); *Reichenbachia*, i. t. 33; *Veitch's Man. Orch. Pl.*, i. pp. 46, 48.

SYN.—*O. hyatrix*, *O. radiatum*.

O. LUTEO-PURPUREUM, *Cobb's variety*.—This beautiful form was described by Mr. J. O'Brien in the *Gardeners' Chronicle*, June 13th, 1891, as follows:—"Its very dark sepals and petals resemble in their rich shining colour some of the bright transparent hues seen in tortoise-shell; the sepals are reddish chocolate-brown except the tips, and two fine lines at the base of each which are bright yellow; the fringed petals are yellow, richly barred and spotted with reddish-brown, and the broad and beautifully fringed lip is yellow.

O. LUTEO-PURPUREUM CRISPATUM, *Rchb. f.*—A very striking variety, which flowered in the collection of A. E. M. Mundy, Esq., of Shipley Hall, Derby. We cannot do better than quote Reichenbach's own words:—"It has nearly the whole front half of the lip convoluted into deep folds. It is quite a novel feature, and resembles an old-fashioned ruff."—*New Grenada*.

FIG.—*Gard. Chron.*, 3rd ser., 1889, v. p. 233, f. 41.

O. LUTEO-PURPUREUM MAESEREELII, *Rchb. f.*—A distinct variety, exhibited at the International Exhibition at Ghent in 1838, by M. Maesereel, of Ghent. In growth it resembles the type. Sepals and petals orange yellow; lip light yellow.

FIG.—*Le Moniteur d'Hort.*, 1889, p. 233.

SYN.—*O. Maesereelianum*.

O. LUTEO-PURPUREUM MAGNIFICUM, *Williams et Moore*.—A fine and bold variety, producing long spikes; the flowers measure from 3 to 4 inches across; sepals bright chestnut-brown, having a yellow zone at the base and the apex of the same colour; petals yellow, having several small and three larger chestnut-brown blotches at the basal part, and a zone of the same colour across its whole breadth about the middle; lip pale yellow, chestnut-brown, with basal part and crest deep yellow.—*New Grenada*.

FIG.—*Orchid Album*, vi. t. 254.

O. LUTEO-PURPUREUM PRIONOPETALUM.—See *O. PRIONOPETALUM*.

O. LUTEO-PURPUREUM SCEPTRUM, *Rchb. f.*—The royal or sceptre-bearing variety of the type, and a plant of wondrous beauty. The sepals are oval, oblong acuminate, toothed, and undulated, deep chestnut-brown margined with yellow; the petals of the same form as the sepals, irregularly lobed at the edges, yellow, blotched with the same colour as the sepals; and the oval cordiform lip yellow, with serrated edge and apiculate apex, and having a curved blotch of chestnut-brown in front of the disk.—*New Grenada*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 73; *Orchid Album*, vii. t. 294.

O. LYROGLOSSUM, *Rchb. f.*—This very fine species is in the way of *O. Wilckeanum*, but differs in colour. The pseudobulbs are oblong ovate, compressed, diphyllous; its leaves are oblong ligulate, and its radical scape bears a vigorous raceme, the individual flowers of which are about 4 inches across; the sepals and petals are oblong lanceolate, coarsely toothed at the edges, of a bright yellow heavily blotched with chestnut-brown; the lip is small, much fringed and toothed, similar in shape to that of *O. luteo-purpureum*, yellow with a large blotch of chestnut-brown in the centre. The plant is supposed to be a natural hybrid between *O. Pescatorei* and *O. luteo-purpureum*.—*New Grenada*. [For Illustration, see page 576.]

FIG.—*Gard. Chron.*, N.S., xvii. p. 632, f. 97, and supp. sheet; *Id.*, 1886, xxv. p. 77, f. 15.

O. MACROSPILUM, *Rchb. f.*—This plant was believed to be a natural hybrid by Reichenbach, and has the sepals and petals cuneate-lanceolate acute, in the

way of those of *O. odoratum*, with deep blotches of dark cinnamon; the broad triangular acute denticulate lip has numerous lateral keels terminating in one or several bristles, and a central one standing forward. A very handsome plant.—*U. S. of Colombia*.

FIG.—*L'Orchidophile*, 1885, p. 133, f. 9 (plate).



ODONTOGLOSSUM LYROGLOSSUM.

O. MACULATUM, *La Llave*.—A pretty and attractive species. It has oblong compressed monophyllous pseudobulbs, oblong nervose leaves, and pendulous or semi-erect many-flowered racemes which are produced during winter. The sepals are chestnut-brown within, marked with green transverse bars at the base, sometimes violet-purple; the petals yellow thickly spotted on the basal half with reddish-brown, and the lip cordate of the same colour as the petals. It will last in bloom a long time, and succeeds best in a cool house, in a pot, in peat and moss.—*Mexico*.

FIG.—*Bot. Reg.*, 1840, t. 30; *Pescatorea*, t. 28; *Paxton, Mag. Bot.*, xiii. p. 147, with tab. (*cordatum*); *Batem. Mon. Odont.*, t. 20; *Orchid Album*, ii. t. 52; *Floral Mag.*, t. 348 (*maculosum*); *Vitch's Man. Orch. Pl.*, i. p. 50; *Journ. of Hort.*, 1898, xvii. p. 149, f. 17.

O. MACULATUM DUVIVIERIANUM, *Rchb. f.*—It has been suggested this is a hybrid between *O. maculatum* and *O. nebulosum*. The sepals are longer and

more acuminate than those of *O. maculatum*, orange-yellow spotted with brown; petals pale yellow, also spotted with brown; lip reniform, yellow, having a broad, square, brown blotch at the base, and several small blotches towards the anterior margin.—*Mexico* (?)

FIG.—*Lindenia*, v. t. 218.

O. MACULATUM INTEGRALE, *Rchb. f.*—A very interesting variety of *O. maculatum*, having the same habit of growth. The flowers have the sepals light brown, the petals white with a few transverse bars of brown at the base, and the lip white with a yellow crest.—*Guatemala*.

O. MADRENSE, *Rchb. f.*—According to the strict rules of nomenclature this species ought, perhaps, to bear the name of *O. maxillare*, published by Lindley in 1847, but as there appears to be some doubt as to the present plant being identical with Lindley's species, and as, besides, it is so well known in gardens by the name we here adopt, we have considered it more convenient for garden purposes to retain Reichenbach's name and to relegate the Lindleyan designation to the synonymy. It is a very distinct and handsome species, with tall ligulate or narrowly-oblong two-edged pseudobulbs, lanceolate acute nervose leaves, and lateral scapes bearing an inclined raceme of about eight showy flowers, which are deliciously fragrant, and $3\frac{1}{2}$ or 4 inches across in their vertical diameter; the sepals are lanceolate acuminate, white with a bilobed reddish-purple blotch at the base, the petals broader oblong, white with a purple blotch twice as long as that of the sepals, and the lip shorter ovate cuspidate, with a claw which bears two collateral crispy calli, which, with the disk, are bright orange. This species, which blooms during the summer months, and lasts several weeks in perfection, is well grown by W. Vanner, Esq., of Chislehurst.—*Mexico*.

FIG.—*Orchid Album*, ii. t. 71; *Floral Mag.*, 2nd ser., t. 158 (*maxillare*); *Bot. Mag.*, t. 6144 (*maxillare*); *L'ill. Hort.*, 1883, xxx. t. 480; *Lindenia*, v. t. 209.

SYN.—*O. maxillare*.

O. MAESEREELIANUM.—See *O. LUTEO-PURPUREUM MAESEREELIANUM*.

O. MARRIOTTIANUM, *Rchb. f.*—Perhaps a natural hybrid imported with a batch of *O. cirrhosum* by Mr. Marriott, of Edmonton. In growth it appears to approach nearest to *O. Hallii*. Sepals twisted, petals broader, wavy, both white spotted inside with pale purple, the former having a purple median line at the back; lip pandurate wavy, having some narrow brown stripes at the base.—*Ecuador* (?)

FIG.—*Gardening World*, v. p. 677.

O. MAXILLARE.—See *O. MADRENSE*.

O. MULUS, *Rchb. f.*—A very handsome plant, intermediate between *O. luteo-purpureum* and *O. gloriosum*, differing from the first in its narrower sepals and petals and its constricted pandurate lip, and from the second in its broader sepals and petals, its pandurate lip, the thicker cirrhi of its column, and its radiant sub-basilar callus; the habit and vegetative organs of the plant resemble those of *O. luteo-purpureum*, and it produces large branching many-flowered panicles of

star-shaped flowers; the sepals and petals are bright yellow, very wavy at the margins, irregularly blotched with cinnamon-brown; and the lip panduriform,



ODONTOGLOSSUM MULUS.
(From the *Gardeners' Chronicle*.)

yellow with a cinnamon blotch towards the centre and two or three small spots near the crest. It flowers during the spring months.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 160, ff. 1, 2; *Gard. Chron.*, 1886, N.S., xxv. p. 13 f. 4; *Warner, Sel. Orch. Pl.*, iii. t. 23.

O. MULUS HOLFORDIANUM, *Rehb. f.*—A very fine variety of the preceding, which was flowered by the late R. S. Holford, Esq., Westonbirt, Tetbury, under the care of Mr. Chapman. The ground colour of the flowers is whitish-yellow, the sepals and petals being marked with very dark purple-brown blotches; the lip is white, and has a large pandurate purple spot and several smaller ones on the margins and base.—*New Grenada*.

FIG.—*L'Orchidophile*, 1885, p. 132 (plate) f. 4; *Orchid Album*, ix. t. 429.

O. MURRELLIANUM, *Rehb. f.*—A very lovely plant, imported with *O. Pescatorei*, and doubtless a natural hybrid between that species and *O. naerium*. It was named in honour of Mr. Murrell, gardener to the late W. B. Hume, Esq., in whose collection it first flowered. The plant quite resembles *O. Pescatorei*, and bears a raceme like that of *O. naerium*, the lanceolate acute sepals and petals

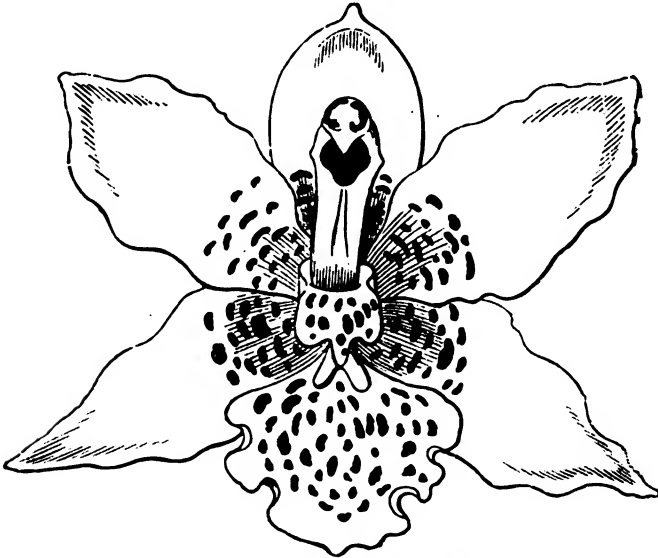
being plane, not at all wavy, white with a light purplish-violet tint, with some darker purple blotches distributed with the greatest irregularity; the narrow three-lobed lip bears on its disk golden lamelliform toothed calli, and has the side lobes semi-ovate, and the front one ligulate acute and crenulate.—*New Grenada*.

O. NAEVIUM, *Lindl.*—A charming dwarf-growing Orchid, bearing considerable resemblance to *Oncidium phymatochilum*. It has small ovate costate pseudobulbs, slender lanceolate leaves, narrowed to the base, and spreading racemes or panicles of stellate flowers, which are produced in June and July, and last a considerable time in perfection. The sepals and petals are narrow ovate-lanceolate, attenuately acuminate, with wavy margins, white irregularly blotched with rosy-purple; and the slightly halberd-shaped lip is nearly of the same form, pubescent, yellow on the prominently cristate disk, the front part white and spotted like the petals.—*Demerara*; *Venezuela*, elevation 6,000 feet; *New Grenada*.

FIG.—*Paxton, Fl. Gard.*, i. t. 18; *Pescatorea*, t. 13; *Flore des Serres*, t. 594; *Batem. Mon. Odont.*, t. 9; *Veitch's Man. Orch. Pl.*, i. p. 52; *Reichenbachia*, 2nd ser., i. t. 44.

O. NAEVIUM MAJUS, *Lindl.*—A beautiful variety of the preceding, producing upright spikes of much larger flowers, which are pure white speckled all over with rich deep crimson, the spots being generally larger and the whole colouration bolder. The plant requires great care to grow it well; a cool house suits it best, with a good supply of water—in short, it should never be allowed to become dry. This and the preceding last several weeks in bloom, and they both make fine exhibition plants.—*New Grenada*, elevation 8,000 feet.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 7; *Gartenflora*, t. 791.



ODONTOGLOSSUM NEBULOSUM.

O. NEBULOSUM, *Lindl.*—A very handsome species, with oblong pseudobulbs, a pair of thick ligulate leaves, and a flower scape which comes up with the young

growth, bearing five or six large flowers, and becoming pendulous as they expand. The flowers are $2\frac{1}{2}$ inches across; the lanceolate elliptic sepals, and the much broader ovate petals are clear white thickly studded in the lower half with spots of reddish-brown, or in some forms with red: the lip is ovate acute, much undulated, and otherwise differs only in the spots being larger, with a faint tinge of yellow on the disk.—*Mexico*.

FIG.—*L'Il. Hort.*, t. 200 (*maxillare*); *Batem. Mon. Odont.*, t. 1: *Gard. Chron.*, 1867, p. 572, with fig.; *Id.*, N.S., 1886, xxv. p. 597, f. 131; *Veitch's Man. Orch. Pl.*, i. p. 53; *Lindenia*, viii. t. 350.

O. NEBULOSUM CANDIDULUM, *Rchb. f.*—A very pretty and delicate variety, precisely like the previous plant, saving in having the sepals and petals pure white, and entirely destitute of the spotting or clouding at the base. It is not so good as the type, but it is very distinct, and well worth a place in every collection.—*Mexico*.

FIG.—*Gard. Chron.*, 1867, p. 710, with fig.; *Id.* N.S., 1885, xxv. p. 596, f. 130.

O. NEVADENSE, *Rchb. f.*—A thoroughly distinct as well as rare and beautiful species. It has large oblong-ovate pseudobulbs which are diphyllous; the lorate



ODONTOGLOSSUM NEVADENSE.

(From the *Gardeners' Chronicle*.)

lanceolate keeled leaves are much narrowed to the base, and the radical scapes bearing long drooping racemes of numerous large and pleasingly coloured flowers, of which the lanceolate sepals are of a clear bright chestnut with a narrow even



ODONTOGLOSSUM
(From the *Giard*)



...UM OERSTEDII.
(...ers' Chronicle.)

edge of yellow, the petals smaller, similarly coloured, with two forked bars of pale yellow at the base opposite the lateral lobes of the lip, which are large, erect, crescent-shaped, white spotted with chestnut, the front lobe large, roundish, cuspidate-acuminate, pure white, deeply fringed, the disk with a bifid crest and three ob-cuneate brown spots.—*New Grenada*.

FIG.—*Xenia Orch.*, ii. t. 191, ff. 1—3; *L' Ill. Hort.*, 3rd ser., t. 45; *Orchid Album*, iii. t. 131; *Lindenia*, i. t. 3; *Veitch's Man. Orch. Pl.*, i. p. 54.

O. NOBILE.—See *O. PESCATOREI*.

O. NOEZLIANUM.—See *COCHLIODA NOEZLIANA*.

O. ODORATUM, *Lindl.*—This remarkably sweet-scented species has oblong compressed grooved pseudobulbs, narrowly ensiform acute leaves, and branching panicles sometimes 3 feet long, the flowers being numerous, and having the sepals and petals golden-yellow blotched with brownish-red, narrowly lanceolate and crispy at the edges; the lip is of the same colour, white towards the base, hastate, with the front lobe broadly subulate, and the disk with two pairs of erect teeth. It blooms during the winter months. This plant is often confounded with *O. gloriosum*, but it is quite distinct.

FIG.—*Bot. Mag.*, t. 6502; *Veitch's Man. Orch. Pl.*, i. p. 55.

O. ODORATUM BAPHICANTHUM.—See *O. BAPHICANTHUM*.

O. ODORATUM LATIMACULATUM, *André*.—A variety which has the parts larger as well as flattened out and broader, and the blotches of purple-brown on the several members broader and more intensely coloured.—*New Grenada*.

FIG.—*L' Ill. Hort.*, 3rd ser., t. 39.

O. ODORATUM STRIATUM, *Rehb. f.*—A handsome variety with very pale flowers, covered with elongated blotches of a deep brown.

FIG.—*Lindenia*, v. t. 233.

O. OERSTEDII, *Rehb. f.*—A very pretty diminutive species, having oblong ancipitous pseudobulbs, which are furnished with a single cuneate oblong leaf, and producing erect scapes bearing one or two flowers, of which the lanceolate wavy sepals and the obovate retuse undulated petals are pure white, while the flabellate lip, four-lobed in front, is white with a yellow disk and a few red spots. This plant is very floriferous, and is in addition deliciously scented. It flowers during the summer months.—*Costa Rica*.

FIG.—*Xenia Orch.*, i. t. 68, ff. 1—3; *Gard. Chron.*, N.S., vii. p. 811, f. 128; *Id.*, 1886, xxv. p. 757, f. 167; *Bot. Mag.*, t. 6820; *Veitch's Man. Orch. Pl.*, i. p. 57.

O. OERSTEDII MAJUS, *Williams*.—This charming variety flowered in the Victoria and Paradise Nurseries. Pseudobulbs clustered, oblong-ovate, compressed, furnished with a single stalked cuneate-oblong leaf, some 4 or 5 inches long, by 1 inch broad, and deep green; scape longer than the leaves, erect, bearing on the summit from two to five flowers about 1½ inch across, these are pure white, and yield a grateful perfume; sepals and petals nearly equal, oblong-obtuse, spreading, fleshy in texture, and pure waxy white; lip three-lobed, side

lobes small, anterior lobe large, rounded or sub-orbicular, deeply bilobed in front, pure white, crest yellow, dotted with orange-yellow; column white.—*Costa Rica*.

FIG.—*Orchid Album*, viii. t. 376.

O. ORTGIESIANUM, *Sander*.—A handsome form in the way of *O. Ruckerianum*. The sepals and petals have a marginal border of rich yellow, and are spotted in the centre with bright maroon. It is named in honour of Herr Ortgies, of Zurich.—*Native country not stated*.

FIG.—*Gartenflora*, 1891, t. 1360.

O. OWENIANUM, *Rolfe*.—Mr. Rolfe in describing this plant does not appear to be certain whether to consider it a natural hybrid or a good species. The lip is said to be somewhat like that of *O. Pescatorei*. "The white lip, yellowish-white petals, with or without a chocolate blotch, and the sepals with the whole of the disk of the latter colour, give it a very distinctive appearance. Named in honour of G. D. Owen, Esq., of Selwood, Rotherham, a zealous orchidist."—*Native country not stated*.

O. PARDINUM, *Lindl.*—One of the most distinct species of the genus, which was first flowered by Lord Rendlesham in 1878. It produces large ovate compressed pseudobulbs, narrow elliptic-oblong acute leaves, and strong branching panicles 3 feet long or more, freely furnished with flowers of large size and of the purest golden-yellow colour, ornamented with several small orange-red ocellated spots on the much undulated petals and the lip, which latter is of a deeper yellow than the other parts of the flower. It should be cultivated on account of its distinct colour—a palish yellow lightly spotted, its long lasting properties, and its delicious fragrance. It flowers in March and April.—*Peru, Ecuador*.

FIG.—*Bot. Mag.*, t. 5993; *Orchid Album*, vi. t. 274.

SYN.—*Cyrtorchilum pardinum*.

O. PENDULUM.—See *O. CITROSUM*.

O. PESCATOREI, *Linden*.—A magnificent species, and one of the choicest gems of the cool Orchid house. It is furnished with small ovate slightly costate pseudobulbs, bearing a pair of lorate leaves a foot in length, and producing branched panicles of richly ornamental flowers during April and May. The sepals and petals are ovate-oblong, undulated, white with a shade of rose, and the cordate oblong cuspidate sub-pandurate lip is white spotted with rose, the disk with its crest being bright yellow streaked with crimson. The panicles sometimes contain as many as a hundred flowers. We ourselves showed a specimen at Brussels with one hundred flowers expanded at one time; and when grown in this way the plant produces a charming effect. There are several varieties of it, all of them good. It does best in a cool house, grown in a pot.—*New Grenada; Pamplona*.

FIG.—*Parson, Fl. Gard.*, iii. t. 90; *Pescatorea*, t. 1; *Flore des Serres*, t. 1624; *Lew. Jard. Fl.*, t. 331; *Warner, Sel. Orch. Pl.*, i. t. 25; *Batem. Mon. Odont.*, t. 5; *Orchid Album*, iv. t. 175; *Floral Mag.*, t. 241 (*splendens*); *Veitch's Man. Orch. Pl.*, i. p. 59; *Journ. of Hort.*, 1889, xviii. p. 153, f. 24; *Gard. Chron.*, 3rd ser., 1889, vi. p. 689, f. 93; *Reichenbachia*, 2nd ser., ii. t. 71.

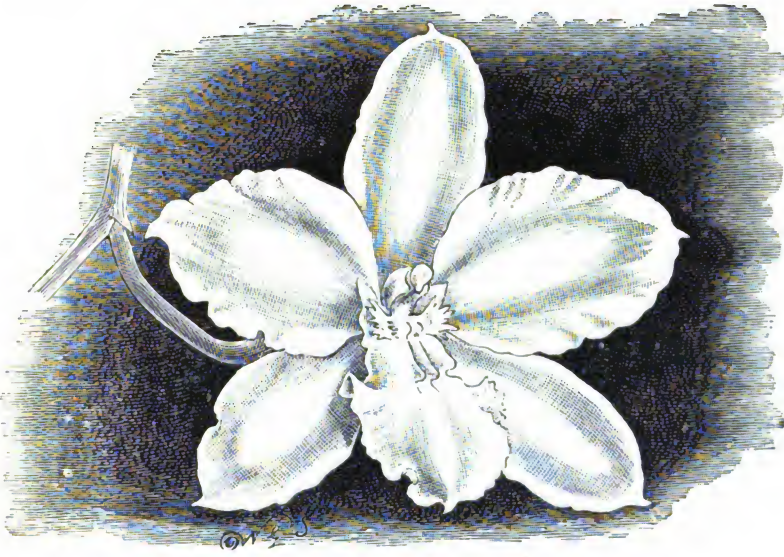
SYN.—*O. nobile*.

O. PESCATOREI GERMINYANUM, *Williams*.—One of the most splendid varieties of this popular genus we have seen. The sepals are spreading ovate-oblong, terminating in a small point, nearly smooth at the edges, white suffused with rose and sparingly spotted with rose-purple; petals similarly spotted, but much broader, white and crisped at the edges; lip oblong-cordate, contracted in the middle, slightly toothed at the base, and notched at the margin, white; disk furnished with a pair of broad lacerated appendages, streaked with rosy-purple; crest yellow. Dedicated to M. le Comte Adrien de Germiny, of Gouville, France.—*New Grenada*.

FIG.—*Orchid Album*, vii. t. 305.

O. PESCATOREI LEUCOXANTHUM, *Rchb. f.*—Another lovely form with pure white flowers, except some orange on the crest of the lip, wings, and base of the column. It was flowered and exhibited by Baron Sir J. H. W. Schröder.—*New Grenada*.

FIG.—*Gard. Chron.*, 3rd ser., 1887, i. p. 606, f. 114.



ODONTOGLOSSUM PESCATOREI LEUCOXANTHUM.
(From the *Gardeners' Chronicle*.)

O. PESCATOREI LINDENIAE, *Hort.*—A very distinct variety, having a single large violet-purple spot in the centre of each segment, or two or three smaller ones close together in the same place; lip blotched at the base with the same colour.—*New Grenada*.

FIG.—*Lindenia*, vii. t. 329.

O. PESCATOREI LINDENIANUM, *Linden et Rodigas*.—A pretty and delicate variety, having sepals striped with a lovely rosy-purple, and the petals mottled with maroon-purple, side laciniae of the lip deep rosy-purple, crest yellow.—*New Grenada*.

FIG.—*Lindenia*, iv. t. 178.

O. PESCATOREI LOWIANUM, *Rehb. f.*—This plant was first flowered by Sir T. Lawrence, Bart., and has very long sepals and petals which have numerous mauve spots and dots on a fine light mauve ground.—*New Grenada*.

O. PESCATOREI MELANOCENTRUM, *Rehb. f.*—A fine and distinct variety, which is described as follows in the *Gardeners' Chronicle*, n.s., 1885, xliii. p. 239:—"It looks as if it had a black centre. The top of the column and the whole of its front side have this colour; the lamellae of the base of the lip and the bi-lamellate disk between them are likewise blackish-purple, while the small anterior lamellae are orange, with a black-purple margin at the base; sepals with a light purple wash on the middle line; excepting the places mentioned the whole flower is white." It was flowered and exhibited by Mr. W. Bull.—*New Grenada*.

O. PESCATOREI SCHRÖDERIANUM, *Rehb. f.*—A very beautiful variety of *O. Pescatorei*, the original plant of which sold for 70 guineas, and is now, after having changed owners, in the collection of Baron Sir J. H. W. Schröder. The Dell, Staines. In growth it resembles the type, but its flowers come near those of the variety *Veitchianum*. The sepals and petals are densely spotted and blotched with purple, which marking, being rather confined to the basal part of the sepals and petals, gives the flowers a very distinct appearance.—*New Grenada*.

FIG.—*Gard. Mag.*, 1892, p. 135.

O. PESCATOREI STUPENDUM, *Rehb. f.*—A large-flowered form. "Dorsal sepal with a bright mauve-purple disk; lateral sepals of the same colour on the outer halves, inner halves white; petals snow-white with a few dark mauve spots; lip with the usual yellow calli; borders of the side laciniae and of the anterior blade full of broken short mauve lines."

O. PESCATOREI THOMSONIANUM.—A lovely variety, exhibited in 1889 by H. M. Pollett, Esq., and Messrs. W. Thomson & Son, of Galashiels, after whom it is named. The sepals and oval petals are bluish tinted with a few deep purple blotches in the middle; the lip usually having only one blotch; the yellow disk is heavily stained with deep purple on the radiating fringe at the base.

FIG.—*Gardening World*, v. p. 545 (woodcut).

O. PESCATOREI VEITCHIANUM, *Rehb. f.*—A very handsome and distinct variety, resembling the type in its habit of growth, and to some extent resembling *Schröderianum* in its flowers. The sepals and petals are white transversely blotched at the base with mauve-purple, these markings having the peculiarity of agreeing in their positions on the sepals and petals, so that they form a series of irregular spots and broken rings extending towards the apex. This plant is in the collection of Baron Sir J. H. W. Schröder.—*New Grenada*.

FIG.—*Orchid Album*, ii. t. 68; *Veitch's Man. Orch. Pl.*, i. pp. 1 and 60.

O. PHALAEOPSIS.—See *MILTONIA PHALAEOPSIS*.

O. PHYLLOCHILUM.—See *ONCIDIUM HASTATUM*.

O. PLATYCHEILUM, *Weathers*.—This new and distinct *Odontoglossum* was exhibited before the Royal Horticultural Society on March 22nd, 1892, by R. H. Measures, Esq., of Cambridge Lodge, Camberwell. It has ovoid pseudobulbs,



ODONTOGLOSSUM PLATYCHEILUM.
(From the *Gardener's Chronicle*.)

slightly compressed; leaves solitary, oblong-lanceolate, about 9 inches long, 1 inch broad; flowers $1\frac{1}{2}$ to 2 inches in diameter; sepals and petals white, having

chestnut-brown markings at the base; lip broad somewhat cordate, pale rose spotted with crimson-purple.—*Native country not stated.*

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 329, f. 56; *Gard. Chron.*, 3rd ser., 1892, xi. p. 587, f. 84.

O. POLLETTIANUM, *Hort.*—A very handsome and distinct *Odontoglossum*, probably a natural hybrid between *O. crispum* and *O. gloriosum*. The sepals and petals are white tinged with purple on the underside and heavily blotched and spotted with reddish-brown; the lip wedge-shaped. It was exhibited by H. M. Pollett, Esq., Bickley, at South Kensington, at the R. H. S. meeting in February, 1884.—*New Grenada.*

FIG.—*Orch. Album*, vi. t. 280.

O. POLYXANTHUM, *Rchb. f.*—A rare and handsome plant resembling *O. Hallii* in the character of its pseudobulbs and foliage. Its flower scapes are



ODONTOGLOSSUM POLYXANTHUM.

some 2 feet or more in length, drooping, the individual flowers being about 4 inches in diameter. The sepals and petals are large ovate-lanceolate acute, deep tawny yellow, the sepals having a large roundish blotch of bright chestnut-red towards the end and various smaller markings near the base, the petals being marked only near the base; the lip is shorter, cordate, cuspidate, nearly covered by a broad dark chocolate-brown blotch, the edge being just marked

with yellowish-white and finely toothed. It flowers in April and May. Introduced by Mr. E. Klaboch in 1878.—*Ecuador*.

FIG.—*Floral Mag.*, 2nd ser., t. 453; *Warner, Sel. Orch. Pl.*, iii. t. 37; *Veitch's Man. Orch. Pl.*, i. p. 61; *Gard. Chron.*, N.S., 1886, xxv. p. 141, f. 28; *Revue Hort. Belge*, 1891, p. 376 (plate).

O. POLYXANTHUM GRANDIFLORUM, *Williams*.—A beautiful variety, which flowered in the collection of W. Lee, Esq., at Leatherhead. Flowers showy, measuring about 4 inches across, yellow heavily spotted with bright chestnut-brown; sepals lanceolate acuminate, entire, spreading, somewhat recurved at the tip, deep ochre-yellow, marked with a few large blotches of irregular form, and of a rich deep brown colour, the upper one, which is some distance from the apex, being the largest, and the others extending to the base, petals about the same size and form, of the same rich deep yellow with brown markings, but the blotches on these are smaller and confined to the basal third of the surface; lip stalked, the stalk appressed to the column fully half-way up, roundish-oblong, concave, cordate at the base, toothed at the margin, cuspidate at the apex, almost wholly covered with a blotch of glossy chocolate-brown, with a very narrow border of white, and marked with a scalloped spot of light yellow towards the disk, which bears a prominent crest of two oblong dentate lobes running out to a point in front, and is yellow with a few red-brown striae on the broader portion.—*Ecuador*.

FIG.—*Orchid Album*, vi. t. 258.

O. PRAENITENS, *Rehb. f.*—A very interesting species, whose flowers are in the way of those of *O. triumphans*, but smaller, though with clear shining colours, which make them very effective. The sepals and very wavy petals are bright shining sulphur-yellow with a few large maroon-brown blotches; and the lip has the claw white, and its anterior part yellow, marked in the centre with a cinnamon-coloured blotch. It flowers in the spring months. At one time the late Prof. Reichenbach thought it might be a natural mule between *O. triumphans* and *O. tripudians*, but the shape of the lip, recalling that of the old *Miltonia cuneata*, induced him to alter this opinion.—*New Grenada*.

O. PRAESTANS, *Rehb. f. et Wurac.*—This, according to Reichenbach, is much in the way of *O. odoratum*, but is distinguished from that species by its sepals and petals being internally maroon-brown from the middle to the top, the calli being peculiarly serrate.—*Ocaña, New Grenada, Peru*.

FIG.—*Lindenia*, vii. t. 322.

O. PRIONOPETALUM, *Lawrence*.—A very handsome and distinct species of the *O. luteo-purpureum* section, producing large flowers which measure upwards of 4 inches across. The sepals are linear-lanceolate, with entire edges, rich yellow heavily spotted and barred with bright chestnut-brown, the petals are broader, being deeply serrated at the margins, similar in colour to the sepals; the lip sub-panduriform, dentate at the edge, blade white in front, pale yellow behind, with a large transverse brown blotch in the centre. It flowers in spring.—*New Grenada*.

FIG.—*Reichenbachia*, ii. t. 84; *Orchid Album*, x. t. 474.

SYN.—*O. luteo-purpureum prionopetalum*.

O. PULCHELLUM, *Bateman*.—A neat and pretty species, remarkable for its very thin oblong ancipitous two-leaved pseudobulbs, and its narrow grassy leaves; the flowers are white, with the exception of the crest of the lip, which is spotted with crimson. It blooms during the winter months, and lasts five weeks in good condition.—*Guatemala*.

FIG.—*Bot. Reg.*, 1841, t. 48; *Bot. Mag.*, t. 4104; *Moore, Ill. Orch. Pl. (Odontoglossum)*, t. 9; *Warner, Sel. Orch. Pl.*, ii. t. 13; *Hook. First Cent. Orch. Pl.*, t. 81.

O. PULCHELLUM DORMANIANUM, *Williams*.—This is the largest variety of *O. pulchellum* we have yet met with, being far superior to *O. pulchellum majus*. The pseudobulbs are much stronger and stouter than in the type and are rounder in form; the flowers, which are white, and $1\frac{1}{2}$ to $1\frac{3}{4}$ inch in diameter, have the sepals and petals fully $\frac{1}{2}$ inch broad. It is named in compliment to C. Dorman, Esq., Laurie Park, Sydenham.—*Guatemala*.

O. PULCHELLUM MAJUS, *Hort*.—This is a very robust form of *O. pulchellum*, having the pseudobulbs much larger; the flowers are also nearly double the size of those of the ordinary variety, and the racemes are stronger, with the blossoms more numerous. In addition they are very fragrant, so that one plant will perfume the house in which it is growing.—*Guatemala*.

O. PURUM, *Rehb. f.*—A very pretty little species in the way of *O. Wallisii*. The flowers grow in spreading racemes, the sepals being of a light yellow with the disk entirely covered with sepia-brown, the petals light yellow with a few blotches of brown at the base, and the lip pure white, having a large purple blotch about the centre. It flowers in the summer months.—*New Grenada*.

O. RADIATUM.—See *O. LUTEO-PURPUREUM*.

O. RAMOSISSIMUM, *Lindl.*—This is a very old and distinct species with oval compressed pseudobulbs, very long ensiform leaves, and scapes 3 or 4 feet high, bearing stiff and excessively divaricately branched panicles of innumerable flowers; the sepals and petals are narrow lanceolate undulate, of a brilliant white, the basilar portions of the petals lilac-purple; the lip is cordate, dilated and undulated at the base, the front part lanceolate, acutely pointed, having a large purple-lilac disk. It flowers during the winter months. There is another variety of this plant the flowers of which are suffused with purple-lilac.—*New Grenada*.

FIG.—*Lindenia*, i. t. 17; *Reichenbachia*, 2nd ser., i. t. 41; *Journ. of Hort.*, 1890, xx. p. 503, f. 76; *L'Ill. Hort.*, 1893, p. 21, t. 170.

O. RAMOSISSIMUM LILIIFLORUM, *Veitch*.—A very pretty and distinct plant received by us from New Grenada some years ago through Mr. C. Patin. The flowers are larger than those of the type, and the sepals and petals are not so much undulated, pale purple-lilac, with a few white spots on the basal halves.—*New Grenada*.

SYN.—*O. liliiflorum*.

O. REICHENHEIMII.—See *O. LAEVE REICHENHEIMII*.

O. RETUSUM, *Lindl.*—Though not a large-flowered magnificent plant, this species is well worth a place in a collection on account of the profusion of

flowers it produces during winter. It is dwarf-growing, with linear-lanceolate papery leaves, and an inflorescence consisting of a branching panicle bearing upwards of a hundred flowers. The sepals and petals are lanceolate acute, orange-red tinged with yellow; the lip oblong retuse, bi-lamellate at the base, in some varieties yellow, and in others of the same colour as the sepals and petals. It is very rare.—*Ecuador*.

O. RHYNCHANTHUM, *Rchb. f.*—Supposed to be a natural hybrid between *O. purum* and *O. Lindleyanum*. "Raceme lax; sepals and petals ligulate acute, yellow with a narrow brown line, petals with a few brown spots at base, and a curious lip, the anterior blade of which is narrow and acuminate."—*New Grenada*.

O. RIGIDUM, *Lindl.*—Although a very old species, this has not until recently been known in collections. It is described in *Folia Orchidacea* as follows:—"Panicle stiff, erect, pyramidal, with short ascending zig-zag branches, clothed at the base with mucronate scales; bracts ovate, concave, mucronate; flowers yellow, whole-coloured, with a very long narrow stalk to the lip."—*Peru*.

O. ROEZLII.—See *MILTONIA ROEZLII*.

O. ROSEUM.—See *COCHLIODA ROSEA*.

O. ROSSII, *Lindl.*—A very pretty and desirable little Orchid of dwarf habit, growing some 6 or 8 inches high. Its pseudobulbs are tufted ovate and ancipitous, its leaves oblong lanceolate, and its flowers borne on radical one- or two-flowered scapes. The flowers are about 2 inches in diameter; the sepals are linear-lanceolate acuminate, keeled, greenish-yellow transversely barred with brown; the petals are oblong obtuse, revolute at the tips, white with a dark purple spot at the base, and the lip is roundish ovate emarginate, with a cup-shaped fleshy yellow crest, with two blunt teeth in front. The plant produces its white and purple flowers during the winter in great profusion, and lasts long in beauty. It is best grown in a basket or on a block, but should always be kept moist.—*Mexico*.



ODONTOGLOSSUM ROSSII.

FIG.—*Bot. Reg.*, 1839, t. 48; *Maund, Botanist*, v. t. 222; *Moore, Ill. Orch. Pl. (Odontoglossum)* t. 3; *Knowles & Westc. Floral Cab.*, t. 129; *Reichenbachia*, i. t. 4.

SYN.—*O. acuminatum*, *O. apterum*.

O. ROSSII ALBENS, *H. Williams*.—A fine variety of this popular *Odontoglossum* which flowered with Reginald Young, Esq., of Liverpool; flowers mostly in pairs some 3 inches across, sepals lanceolate-acuminate, white, transversely

banded with soft green; petals oblong, much broader than the sepals, but like them, white with a few transverse blotches of soft green towards the base; lip cordate, white, undulate on the margin, and having a yellow crest.—*Mexico*.

FIG.—*Orchid Album*, x. t. 434.

O. ROSSII AMESIANUM, *Williams*.—A most chaste and beautiful variety, named in honour of the late Hon. F. L. Ames, of Boston, U.S.A. Flowers 2 to 3 inches across; sepals and petals spreading, the sepals lanceolate acuminate, greenish-white, spotted and barred with chestnut-brown; petals much broader than the sepals, oblong-ovate, white, with a large chestnut-coloured blotch which almost covers the basal half; lip clawed, broadly cordate, white, beautifully crisp round the edge; crest concave, yellow.—*Mexico*.

FIG.—*Orchid Album*, viii. t. 313.

O. ROSSII MAJUS, *Van Houtte*.—This is a superb variety of *O. Rossii*, having the growth somewhat more robust, and the deliciously fragrant flowers vastly superior in size, often measuring as much as 3 inches or upwards in diameter, and two or three blossoms being frequently borne upon each spike; petals white, having a few purplish crimson blotches towards the base; sepals also white beautifully striped with transverse bars of purplish crimson; lip large, cordate and pure white, the column being in some varieties purple, in others yellow. It blooms during mid-winter, lasting a very long time in full beauty. This is a plant which should be in every collection in quantity.—*Mexico*.

FIG.—*Flora des Serres*, t. 2110; *Warner, Sel. Orch. Pl.*, iii. t. 15; *The Garden*, 1885, xxviii. p. 226, t. 507; *L'Orchidophile*, 1885, p. 203; *Revue Hort.*, 1887, p. 492 (plate), f. 1; *Revue Hort. Belg.*, 1888, p. 153 (plate).

O. ROSSII RUBESCENS, *Lindl.*—A very beautiful and chaste variety, having the flowers deeply tinged with rose, the spots on the sepals and on the base of the petals being reddish-brown.—*Nicaragua*.

FIG.—*Lindenia*, i. t. 26; *Veitch's Man. Orch. Pl.*, i. p. 64; *Gardening World*, ii. p. 316.

SYN.—*O. rubescens*.

O. ROSSII SMEEANUM, *Rchb. f.*—A handsome variety with large flowers, bloomed by A. H. Smee, Esq., The Grange, Carshalton. Sepals chestnut-brown with a few whitish dots; "petals white, with a full self-coloured, lobed, horse-chestnut disk and mid base, not spotted; lip white with a yellow callus."

O. RUBESCENS.—See *O. ROSSII RUBESCENS*,

O. RUCKERIANUM, *Rchb. f.*—A rare and handsome Orchid, dedicated to the late Sigismund Rucker, Esq., in whose collection it first flowered. It was one of the first to appear of those mysterious plants which are now generally looked upon as natural hybrids, and is quite a gem, probably having *O. crispum* for one of its parents. The habit and general character agrees with *O. crispum*, but the flowers differ much in colour. The lanceolate cuspidate sepals and petals are creamy white with a border of deep violet, and a few oblong spots of brown on the inner surface; the oblong ligulate acuminate lip, which is angulate on both sides at the base, is yellow in that part, and has two or three chestnut-brown blotches in the centre. The petals have the chestnut-brown basilar lines

seen in *O. Andersonianum*. The column is pluri-cirrrose. This is a very distinct and desirable plant.—*New Grenada*.

FIG.—*Gard. Chron.*, 1873, p. 105, f. 18; *Lindenia*, i. t. 41; *Veitch's Man. Orch. Pl.*, i. p. 27.

O. RUCKERIANUM INSIGNE, *Hort.*—This fine variety flowered in the collection of H. M. Pollett, Esq. The colour of the sepals is deeper than the type, and the whole flower is beautifully spotted.

FIG.—*Gardening World*, iv. p. 117.

O. RUCKERIANUM SPLENDENS, *Rehb. f.*—A very superior form of the type, in which the flowers are much larger, the sepals and petals broader, the blotches larger, and the mauve colouring of the margin of the sepals and petals considerably deeper. It flowers in June.—*New Grenada*.

FIG.—*Journ. of Hort.*, xxvi. 1893, p. 269, f. 53; *Revue Hort.*, 1839, p. 60 (plate), (*superbum*).

O. SANDERIANUM, *Rehb. f.*—A curious and distinct plant which bears stellate flowers from 2 to 3 inches in diameter, and in shape and general appearance resembling those of *O. constrictum*, only that they are altogether larger and finer. The plant was at first described as being similar to *O. nevadense*, indeed it was supposed to be a natural hybrid between *O. nevadense* and *O. naevium*, but we fail to see any resemblance. The sepals and petals are lanceolate acuminate, yellow spotted with reddish-brown; the lip pandurate apiculate, toothed at the edge, the front part enlarged, white having a reddish blotch in the centre, and a few small spots near the apex. It flowers during the winter months.—*New Grenada*.

FIG.—*Reichenbachia*, ii. t. 94.

O. SCHILLERIANUM, *Rehb. f.*—This rare species although first discovered by Wagener about 1853, was not introduced in a living state till 1883. It much resembles *O. odoratum*; the sepals and petals are yellow, spotted with chestnut-brown; lip triangular, pale yellow and having a large reddish-brown blotch in the centre, which is downy on the surface.—*Venezuela*.

FIG.—*Xenia Orch.*, i. t. 22; *Lindenia*, ii. t. 82.

O. SCHLIEPERIANUM, *Rehb. f.*—This species was for a long time confounded with *O. Insleyi*, and in growth it certainly resembles that plant very much, notwithstanding that the flowers are very distinct. The pseudobulbs are ovate ancipitous, diphyllous, the leaves oblong ligulate, and the stout peduncle bearing a raceme of rather large showy flowers; the sepals and broader petals are oblong ligulate acute, of a pale sulphur-yellow, cross-barred, the sepals mostly so, with transverse bands of deepish purple, while the lip is of a paler yellow, auricled on each side of the base with retrorse semi-ovate retuse lobes, the much larger middle lobe being cuneate dilated and emarginate at the apex, and bearing two or three transverse bars of brown; compared with the size of the flower the lip is somewhat small. It flowers towards the end of summer, and not during the winter months.—*Costa Rica*.

FIG.—*Xenia Orch.*, ii. t. 143; *Gard. Chron.*, 1865, p. 1082, with fig.; *Floral Mag.*, t. 461; *Gard. Chron.*, N.S., 1886, xxv. p. 269, f. 56.

SYN.—*O. grande pallidum*; *O. Warscewiczii* (Bridges).

O. SCHRÖDERIANUM, *Rehb. f.*—This distinct and pretty novelty was flowered in 1882 by Baron Sir J. H. W. Schröder, the plant being under the care of his gardener Mr. Ballantine. In their general form the flowers resemble those of *O. tripudians*, between which and *O. Pescatorei* it is suggested that it may be a wild mule. The sepals and petals are oblong acute wavy, white with mauve-purple blotches; the lip is pandurate, broader at the basal part, narrower, obcordate apiculate in front, white with two mauve-purple blotches on the disk, behind which stands the callus, consisting of a plate of radiating spines on each side, yellow with some red spots. It flowers in summer.—*New Grenada*.

FIG.—*Reichenbachia*, ii. t. 96; *Journ. of Hort.*, 1887, xv. p. 257, f. 33; *Id.*, xx. 1890, p. 127, f. 20; *Orchid Album*, viii. t. 382; *Vitch's Man. Orch. Pl.*, viii. p. 107.

O. SPECTATISSIMUM.—See ODONTOGLOSSUM TRIUMPHANS.

O. STAUSTRUM, *Rehb. f.*—Imported from New Grenada, and probably a natural hybrid between *O. Lindleyanum* and *O. tripudians*. Sepals and petals broader than those of the first-named, light yellowish-green blotched with brown; lip white, mid lobe brown, side lobes light brown at the top.—*New Grenada*.

O. STELLIMICANS, *Rehb. f.*—This, according to Professor Reichenbach, is a very fine thing, and has turned up out of a batch of *O. Pescatorei*; it may be a mule between this and *O. triumphans*, or *O. tripudians*, or even *O. Lindleyanum*; the sepals and petals are lanceolate stellate of a good clear yellow, the petals having a single brown line at the base, and the sepals being washed with reddish-mauve outside, and having a few large dark brown-purple blotches inside; blade of lip pandurate, white changing to lemon with a few crimson blotches.—*New Grenada*.

O. TIGRINUM.—See ONCIDIUM TIGRINUM.

O. TRIPUDIANS, *Rehb. f. et Warsc.*—Though scarcely occupying a place in the front rank of *Odontoglossa*, this is a really handsome and well-marked species, and, moreover, it is very free-flowering. In growth it resembles *O. Pescatorei*, along with which it is frequently imported. The pseudobulbs are ovoid-oblong compressed, the leaves narrow lanceolate acuminate, and the flowers, which grow in simple many-flowered racemes, are remarkable for the dull yellow-green of the exterior surface and the bright colours of the inner surface. The sepals and petals are oblong elliptic acuminate, the former almost wholly of a rich maroon-brown with only the base and tip yellow, the latter golden-yellow with two or three broad unequal blotches of maroon-brown; the lip oblong quadrate, constricted in the middle, the basal part obscurely crenate, the broader rounded apiculate apex crenate at the edge, the colour white, having the region round the calli spotted with a beautiful purplish violet. The calli consist of about ten keels radiating from the claw, the four inner ones produced on to the surface of the basal lobe, and each ends in a spinous process; the wings of the column are deeply toothed. The plant flowers during the autumn months.—*Peru*.

FIG.—*Bot. Mag.*, t. 6029; *Floral Mag.*, 2nd ser., t. 203; *Id.*, t. 407; *L'Orchidophile*, 1888, p. 112.

O. TRIPUDIANS OCULATUM, *Rchb. f.*—A very beautiful variety, first flowered by the late J. Day, Esq., Tottenham. It has large glossy flowers, of which the sepals are almost entirely chestnut-brown with yellow tips; the petals yellow banded with chestnut-brown; and the pandurate lip white with several violet blotches around the crest, and a large brownish-violet blotch on the anterior part, the margin denticulate and crisped. *Peru.*

O. TRIPUDIANS XANTHOGLOSSUM, *Rchb. f.*—This variety is distinct from the preceding, having the lip wholly yellow with mauve blotches, the crests only pure white, thus forming a pretty contrast with the other varieties in our gardens.—*Peru.*

O. TRIUMPHANS, *Rchb. f.*—A magnificent stout-growing species, with large ovate-elliptic compressed ancipitous pseudobulbs, oblong lanceolate acute dark green leaves, and many-flowered racemes of bold and brilliant blossoms, which are produced during the winter and spring months, and will last in perfection for several weeks. The flowers are 4 to 5 inches in diameter; the sepals and petals are lanceolate slightly undulated, the petals rather broadest, both golden yellow transversely barred and spotted with brownish-crimson; the lip is clawed elongate cordiform, white at the base, the acuminate front portion rich deep brownish-crimson. There are many varieties of this plant, some much better than others, but all are worth growing.—*New Grenada.*

FIG.—*L'ill. Hort.*, t. 609; *Batem. Mon. Odont.*, t. 23; *Pescatorra*, t. 46; *Orchid Album*, ii. t. 58; *Puydt, Les Orch.*, t. 30; *Florist and Pom.*, 1877, p. 217, t. 452 (yellow lip and white lip); *Gard. Chron.*, 1867, p. 516, with fig.; *Id.*, x.s., 1886, xxv. p. 141, f. 29; *Lindenia*, iii. t. 134; *Reichenbachia*, ii. t. 86; *Veitch's Man. Orch. Pl.*, i. p. 68; *Journ. of Hort.*, 1886, xii. p. 403, f. 73; *Revue Hort. Belge*, 1892, p. 121, f. 11.

SYN.—*O. spectatissimum*.

O. TRIUMPHANS AUREUM, *H. Williams*.—A distinct and handsome variety, which flowered in the collection of A. H. Smee, Esq., of Carshalton. Flowers some 3 inches across, somewhat fleshy in texture; sepals and petals nearly equal, oblong, acute, ground of both soft light yellow, blotched with orange-yellow; lip large, clawed at the base, the edge being finely toothed, white, with a single large blotch of soft light yellow, which occupies all the anterior portion, leaving just a narrow border of pure white; a few yellow spots about the crest, which is yellow, with two diverging teeth.—*U. S. of Colombia.*

FIG.—*Orchid Album*, x. t. 460.

O. URO-SKINNERI, *Lindl.*—A very beautiful strong-growing species worthily dedicated to Mr. Ure-Skinner, who did so much towards introducing many popular Central American Orchids at a time when but little was known of the mode of securing a tolerably safe transit. It has a creeping rhizome, on which are produced the large ovate compressed shining pseudobulbs, which are spotted with purple, and from the base of which arises the tall scape, 2 feet or more in height, bearing a magnificent raceme of flowers, which are each nearly 3 inches across; the sepals and petals are oblong acute olive-yellow heavily blotched with rich purple-brown; and the lip, which is roundish cordate and convex, is of a charming mauve-purple irregularly mottled with white; the disk bears a pair of white crests, and the upper part of the column is orange-coloured. It

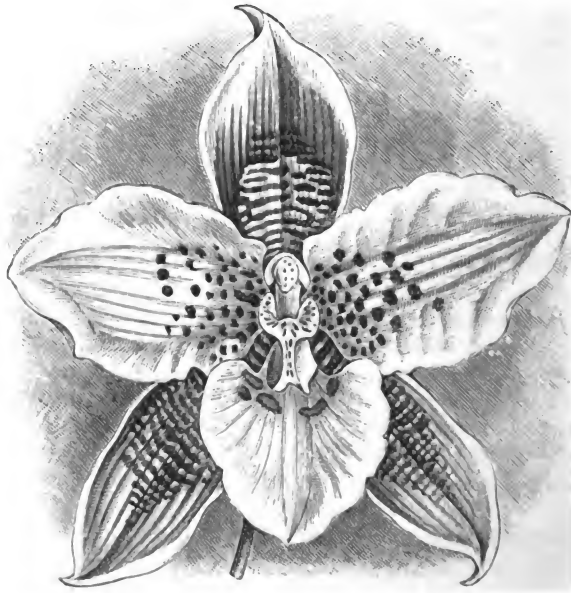
blossoms during the autumn months, and continues flowering for a long time.—*Guatemala*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 17; *Batem. Mon. Odont.*, t. 2; *Lindenia*, iii. t. 122; *Veitch's Man. Orch. Pl.*, i. p. 69; *Orchid Album*, ix. t. 417.

O. URO-SKINNERI ALBUM, *Gower*.—A lovely variety with a pure white lip, was exhibited by Major-General E. S. Berkeley before the Royal Horticultural Society on October 10th, 1893, when it received an award of merit.

O. VELLEUM, *Rehb. f.*—A curious and interesting species, with oblong compressed pseudobulbs, ligulate leaves about 6 inches long, and dense racemes of flowers which have the general shape of those of *O. Karwinskii*. The sepals and petals are yellowish with numerous sepia-brown spots and lines; the lip is stalked, ligulate, broader and a little undulated, apiculate at the tips, white covered with numerous purple-mauve lines and blotches.—*Ecuador*.

O. VEXATIVUM, *Rehb. f.*—This showy and distinct plant is one of recent introduction, and is probably a natural hybrid between *O. nebulosum* and *O. maculatum*. It has oblong compressed pallid pseudobulbs, ligulate leaves,



ODONTOGLOSSUM VEXATIVUM.

and tall racemes of large showy distant flowers; the sepals are light brown tinged with green, and margined with white; the petals are broad, pure white spotted at the base with greenish-brown, and the broad semi-ovate blade of the lip is white with a few spots at the base; the callus is trifid, yellow, with a few reddish-brown spots; the growth of the plant is intermediate between that of the two supposed parents. It was first bloomed by Lord Londesborough under the care of Mr. Denning, the flowers having been produced in August and September.—*Mexico*.

O. VEXILLARIUM.—See *MILTONIA VEXILLARIA*.

O. VUYLSTEKEANUM, *Rchb. f.*—Professor Reichenbach in describing this species says:—"A grand thing. Take an *Odontoglossum mulus sulphureum*, give it a lip much dilated at the top, and add the sharp edges of the petals of (*Odontoglossum Wilckeanum*." The whole flower is sulphur-coloured, with the few blotches of the odd sepal, the petals, and the lip of the "deepest richest dazzling orange"; the lateral sepals are also of that colour, except at their base.—*New Grenada*.

FIG.—*Orchid Album*, vii. t. 334.

O. WALLISII, *Rchb. f.*—A slender and graceful plant, with something the aspect of *O. Lindleyanum*, but superior to that species on account of the more pleasing colour of the lip. The pseudobulbs are ovoid ancipitous, the leaves linear-lanceolate plicate, and the flowers $2\frac{1}{2}$ inches across, pedicellate, racemose, on a slender scape; the sepals and petals are oblong-lanceolate, the former more narrowed to the base, with a long central bar of reddish brown and a narrow even edge of pale yellow, the latter with the central colour more broken up and the yellow edge broader; the lip has the base tubuloso-clavate, and the limb ovate, constricted in the middle, fimbriate, with a decurved front, white, having a double crest with six spreading horns at the base of the lamina, and behind these a series of rosy-purple streaks, the anterior half being of the same rosy tint edged with white, and marked by a half-circular white loop. It blooms during the winter months.—*New Grenada*.

FIG.—*L'III. Hort.*, 3rd ser., t. 56; *Veitch's Man. Orch. Pl.*, i. p. 70.



ODONTOGLOSSUM WARNERIANUM.

O. WARNERIANUM, *Rchb. f.*
—This very rare and handsome species forms as it were "a connecting link between *O. nebulosum* and *O. Rossii*, having the broad petals of the former, and the slender narrow pseudobulbs of the latter." The plant is dwarf in habit, and the scape, which is longer than the leaves, bears four or five flowers. The pseudobulbs are tufted narrow elongate ovate monophyllous, the leaves ligulate acute, and the flowers about 3 inches across; the sepals are oblong acute, white with a few transverse brownish-red bars, the dorsal one having also an ocellate spot at the base; the petals are blunter and wavy, white with an ocellate basal mark enclosed by a semi-circle of roundish brownish-red spots; and the lip broad cordate-triangular obtuse

crenulate and minutely crisped, and having a cuneate obovate three-lobed yellow callus on the disk. A very rare species, beautifully figured in Mr. Warner's work, cited below.—*Mexico; Guatemala.*

FIG.—Warner, *Sel. Orch. Pl.*, ii. t. 20; *Gard. Chron.*, 1865, p. 579, with fig.; *Batem. Mon. Odont.*, t. 3.

O. WARSCEWICZII, *Rchb. f.*—See *MILTONIA ENDRESII*.

O. WARSCEWICZII, *Bridges.*—See *O. SCHLIEPERIANUM*.

O. WATTIANUM, *Rolfe.*—It has been suggested that this is another of the many natural hybrids probably between *O. luteo-purpureum* and *O. Lindleyanum*, of both of which it partakes in character. The flowers measure nearly 4 inches across; sepals lanceolate, acute, yellow blotched with brown; petals spotted with brown; lip cordate wavy, creamy-white with one large and several small brown blotches. Dedicated to T. Rossiter Watt, Esq., of The Briars, Chislehurst.—*? New Grenada.*

FIG.—*The Garden*, 1890, xxxvii. p. 416, t. 751; *Reichenbachia*, 2nd ser., i. t. 9.

O. WILCKEANUM, *Rchb. f.*—This is a very distinct and beautiful species, whose long plumose racemes of yellow and brown flowers are very handsome and attractive, as might be expected when Professor Reichenbach says "it is just intermediate between *O. crispum* and *O. luteo-purpureum*." It was first flowered by M. D. Massange de Louvrex, Marche, Belgium, and is named after his late gardener, Herr Wilcke. The pseudobulbs are rather large ovate-oblong, furnished with ligulate oblong leaves in pairs from the apex, and having radical scapes which spring from the axils of accessory leaves, and bear a stout raceme of over a dozen flowers, which are fully 3 inches across; the lanceolate acuminate wavy sepals are pale yellow with sundry bold blotches of light brown; the broader petals much serrated at the edges, are of the same yellow colour, but with fewer and smaller brown blotches; and the denticulate oblong undulated apiculate lip is of a still paler yellow, and has in the front part a roundish oblong blotch of pale brown, the disk being of a deep yellow, with crests consisting of two many-toothed ragged keels. It flowers during the spring months.—*New Grenada.*

FIG.—Warner, *Sel. Orch. Pl.*, iii. t. 23; *Gard. Chron.*, N.S., 1886, xxv. p. 76, f. 24; *Veitch's Man. Orch. Pl.*, i. p. 78.

O. WILCKEANUM ALBENS, *Rchb. f.*—A handsome form with flowers measuring 4 inches across, in which the sepals and petals are much broader than in the type, white, heavily blotched and spotted with brown. It appeared in the nurseries of M. C. Vuylsteke, of Loochristi, Ghent.

FIG.—*Lindenia*, i. t. 35; *L'Orchidophile*, 1885, p. 132 (plate), f. 2.

O. WILCKEANUM LEROYANUM, *Rolfe.*—Being the first hybrid *Odontoglot* raised in Europe, this plant is of great interest apart from its claim as a distinct and beautiful variety. We have to congratulate M. Leroy, the able gardener to Baron Edmond de Rothschild, Armainvilliers, France, upon his success as being the first to hybridise this most beautiful and interesting genus. Its parents are *O. crispum* and *O. luteo-purpureum*, the result being a beautiful form of the

supposed natural hybrid *O. Wilckeanum*, Reichenbach fil, who at the time he named it guessed that it was a natural mule between these two species. The pseudobulbs are similar to those of *O. crispum*, but somewhat rounder flowers, $3\frac{1}{2}$ inches across, sepals and petals nearly equal; sepals pale yellow, each having three reddish-brown bars; petals lighter in colour having a large blotch in the centre and two smaller rounded ones at the side; lip somewhat like *O. luteo-purpureum* in shape, and having a large reddish-brown blotch.—*Garden hybrid*.

FIG.—*L'Orchidophile*, 1891, p. 112; *Reichenbachia*, 2nd ser., i. t. 37.

SYN.—*O. Leroyanum*.

O. WILCKEANUM PALLENS, *Rehb. f.*—A very handsome variety, of which the sepals and petals are white faintly tinged with yellow and heavily blotched with dull brown, the petals most irregularly serrated; the lip is white, having a blotch of brown in the centre, and a number of small spots around the crests. A grand spike of this variety was communicated to us by Mr. Grossart, when gardener to J. Buchanan, Esq., of Edinburgh, in 1885.—*U. S. of Colombia*.

FIG.—*Orchid Album*, v. t. 201.

O. WILCKEANUM ROTHSCILDIANUM, *Sander*.—A magnificent variety dedicated to Baron Ferdinand de Rothschild, of Waddesdon Manor, Aylesbury. The sepals are broad, pale yellow, heavily blotched with brown; petals also broad and yellow, spotted with brown; lip with one bilobed spot in front of the callus.

FIG.—*Reichenbachia*, 2nd ser., i. t. 22.

O. WILCKEANUM SULPHUREUM, *Rehb. f.*—A fine new variety with flowers of a bright sulphur-yellow, and having a few red blotches and lines on the lip and column, and also one or two red blotches on the lateral sepals; the sepals and petals are much elongated, and the whole flower is very striking.—*U. S. of Colombia*.

O. WILLIAMSIANUM, *Rehb. f.*—A very beautiful large-flowered plant of noble proportions, supposed to be a natural hybrid between *O. grande* and *O. Schlieperianum*. It has ovate compressed tufted pseudobulbs, ligulate oblong acute leaves, and erect scapes bearing a dense oblong raceme of about a dozen flowers. These flowers are about $4\frac{1}{2}$ inches across and about the same in depth, the lanceolate wavy sepals greenish-yellow heavily barred with chestnut-brown; and the broad oblong blunt-ended wavy petals pale yellow with a large pale reddish-brown, darker-veined patch at the base, which is distinctly clawed. The lip, which resembles that of *O. Schlieperianum* in shape, as also do the crests and the column, is creamy white in the anterior portion, with a few pale flesh-coloured blotches at the base. This plant was imported along with *O. Schlieperianum*, which it resembles in growth, and is now in the collection of M. le Comte A. de Germiny, Gouville, France, and produced in June, 1893, twenty flowers on one spike. It flowers in June and July.—*Costa Rica*.

FIG.—*Orchid Album*, iv. t. 163.

O. YOUNGII, *Gower*.—An interesting and distinct species which flowered with Reginald Young, Esq., Fringilla, Liverpool, after whom it is named. It has clustered, sub-rotund, compressed, sulcate pseudobulbs, rough on the surface

and bronzy-green in colour, bearing on the apex a single leaf which is some 5 inches or more in length, by about 1 inch in breadth, lanceolate, acute, carinate beneath and rich deep green; scape radical, much longer than the leaves, furnished with numerous oblong-acute bracts, and bearing from one to three or more flowers which are somewhat thick and fleshy in texture and nearly 2 inches across; sepals oblong acute, slightly incurved, the ground colour pale yellow, heavily marked with transverse spotted bars of dark chocolate; petals much broader than the sepals, ovate, acute, the ground a pale yellow which is marked by large spots of rich deep chocolate; lip transversely reniform, clawed at the base, the margin entire and undulated, white streaked with short lines of reddish brown, and bearing a pair of large dark chocolate spots in the centre; disk fleshy, yellow, more or less streaked with reddish-brown.—*Mexico*.

FIG.—*Orchid Album*, ix. t. 406.

O. ZEBRINUM.—See *ONCIDIUM ZEBRINUM*.

ONCIDIUM, Swartz.

(Tribe Vandeeae, subtribe Oncidieae.)

One of the older and also one of the larger genera of Orchids, some two hundred and fifty or more species being known and described, all of them South American. The species are all evergreen, and many of them are very beautiful, their flowers being richly coloured and showy. They make fine plants, both for exhibition and also for decoration. Some of them are large growers, while others are more compact; they have generally short thick pseudobulbs, from which the leaves and flower spikes proceed, but in this respect there is much dissimilarity among them, as there is in respect of their foliage, the majority having the leaves flat, with the flowers in one group broad-lipped, and in another small-lipped; while some have the leaves terete, and others have them distichous and equitant. For the most part the flowers have a broad spreading lip contracted at the base, and a short column, bearing two petaloid wings or auricles. The species inhabit Brazil, Peru, Bolivia, Mexico, New Grenada, Ecuador, and the West Indies.

Culture.—Some kinds succeed well on blocks of wood, but they are generally best grown in pots or baskets in a compost of peat and moss, with good drainage. They require a liberal supply of heat and moisture in the growing season, but afterwards only just enough water to keep their leaves and pseudobulbs plump and firm. The *Cattleya* house is most suited for the greater portion of them, but some kinds will do

better in the cool house, especially *O. crispum*, *O. concolor*, *O. curtum*, *O. Marshallianum*, *O. praetextum*, *O. Phalaenopsis*, and *O. incurvum*. These plants are very accommodating, since they will thrive in either house. They are propagated by division of the pseudobulbs. The following are all fine sorts, of easy culture, and ought to be in every collection. There are, however, many other species of *Oncidium* worth growing, besides those named in the following descriptions.

O. ACINACEUM, Lindl.—A very distinct and elegant species with oval pseudobulbs, each bearing three flat leaves, and producing flower scapes from 1 to 2 feet long, the upper portion of which becomes a twining raceme; the flowers are about 1 inch across, the sepals linear retuse, white, the lateral ones connate, the petals broad obovate, violet bordered with white, and the concave lip of the same colours, streaked with carmine; the column has two large acinaciform ears. It should be grown in the cool house.—*Peru*.

O. ACROBOTRYUM.—See *O. HARRISONIANUM*.

O. ALBO-VIOLEACEUM.—See *O. INCURVUM*.

O. AMPLIATUM, Lindl.—A showy species, with roundish compressed pseudobulbs, flat oblong lanceolate leaves, and erect flower scapes branched at the top, and forming an ample panicle, the flowers having a broad transverse subrotund bilobed lip of a clear yellow, paler almost white behind, and with a three-lobed callus at the base. There are two varieties of this species to be met with in gardens, differing only in the size of the flowers, which are produced in spring and summer.—*Central America; Santa Martha; U. S. of Colombia*.

FIG.—*Bot. Reg.*, t. 1699; *Veitch's Man. Orch. Pl.*, viii. p. 8.

O. AMPLIATUM MAJUS, Hort., is one of the finest *Oncids* in cultivation. It produces its large bright yellow flowers in abundance, on a long branching spike 3 or 4 feet high, in April, May, and June, and continues blooming for two months; the flowers are almost white on the outer surface. This variety is a robust-growing plant, and should be grown in a mixture of peat and sphagnum; when in good health and well-flowered it is one of the finest of the *Oncidium*s for exhibition purposes.—*Central America: Costa Rica, Nicaragua*, max. temp. 85°.

FIG.—*Flore des Serres*, t. 2140; *Reichenbachia*, ii. t. 70.

O. ANDIGENUM, Lind. et Rehb.—A very rare and beautiful species, similar in growth to *O. concolor*. "The sepals and petals are creamy-white, irregularly blotched and dotted with dull crimson; lip large, three-lobed, the side-lobes very large, creamy-white, suffused with pink and blotched at the base with deep velvety crimson, and dotted and freckled with the same colour; front lobe spotted with rich crimson, and bearing at its base a rich orange crest." The only specimen known to occur in European collections is in the possession of J. M. Bannerman, Esq., Wyastone Leys, Monmouth. Flowers in autumn.—*Ecuador*.

O. ANTHROCRENE, *Rehb. f.*—A very distinct and curious species, somewhat resembling *Miltonia Warscewiczii* in its manner of growth. It produces large upright branched spikes of dark-coloured flowers, having the sepals and petals much undulated, chocolate-brown transversely barred with yellow towards the base, and the lip white. It flowers during the winter months. A very fine spike of this was sent to us recently by Mr. Bailey, gardener to W. L. Barclay, Esq., The Briars, Reigate, who flowers it every year.—*Peru*.

FIG.—*Orchid Album*, ix. t. 392.



ONCIDIUM ANTHROCRENE.

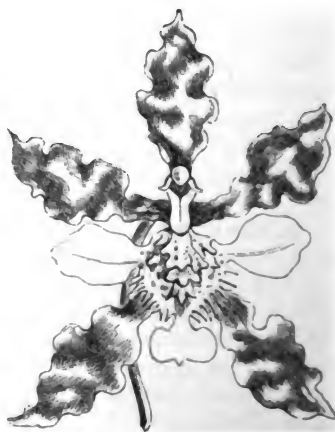
O. AUROSUM.—See *O. EXCAVATUM*.

O. BARBATUM, *Lindl.*—A pretty dwarf compact-habited plant, with ovate compressed pseudobulbs, bearing a solitary linear-oblong leaf 2 or 3 inches long, and producing a slender erect flexuose scape spotted with red, and terminated by a few yellow flowers spotted with crimson, the lip being wholly yellow, equally three-lobed, and bearing a five-horned crest at its base. It succeeds best on a block, but it must have good attention as to the supply of water at the roots. Flowers in autumn.—*Brazil*.

FIG.—*Bot. Reg.*, 1843, t. 66; *Id.*, t. 1660; *Revue Hort. Belge*, 1887, p. 265 (plate).
 SYN.—*O. ciliatum*.

O. BARKERI.—See *O. TIGRINUM*.

O. BATEMANNIANUM, *Knowles et Westcott*.—A beautiful and distinct though somewhat variable species, growing about 18 inches high, and having oblong compressed diphyllous pseudobulbs, and erect oblong pale green leaves; the flowers grow in erect racemes, or in large branched panicles (*ramosum*), and have ovate acute sepals, broader petals, and a large roundish emarginate three-lobed lip which is clear yellow, the small sepals and petals being of a brownish-purple, and the base of the lip of the same colour. There are two varieties, one (A) with racemes, the other (B) with a paniced inflorescence. It is rather a shy-flowering plant, but one which is worth growing on account of its beautiful bright yellow flowers, which are produced at different times of the year. It belongs to the section *Verruci-tuberculata*, and has a prominent crest consisting of three to five short plates at the base, and three others in front, diverging, irregularly lobed, and having around them



ONCIDIUM BARBATUM.

several other processes, besides a few varicosities towards the edge of the lip.—*Brazil*; ? *Mexico*.

FIG.—*K. & W. Floral Cab.*, iii. t. 137; *Bot. Reg.*, 1845, t. 40; *Annales de Gand.*, 1845, t. 1; *Journ. of Hort. Soc. Lond.*, 1848, xvii. (*Pinellianum*).

SYN.—Var. A.: *O. spillopteron*, *O. gallo-parinum*, *O. stenopetalum*; Var. B.: *O. ramosum*, *O. Pinellianum*.

O. BICALLOSUM, *Lindl.*—A showy dwarf species without pseudobulbs, but producing a single dark green oblong leaf, which is remarkably thick and fleshy in texture, and keeled so as to become almost boat-shaped. The peduncle or scape rises with the leaf from between some basal scales, and is dwarfish, erect, bearing a many-flowered raceme; the flowers are large and showy, with obovate spreading sepals and petals, the latter rather larger, all undulated and yellow tinged with green, and a large three-lobed lip of a bright yellow, the lateral lobes small and obovate, the intermediate one large and two-lobed, with a bicallose crest at its base. This makes a fine plant for winter blooming, and continues in perfection a long time. It is very much like *O. Carendishianum* in its flowers and manner of growth, but is less robust.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 4148 (colour incorrect); *Bot. Reg.*, 1843, t. 12; *L'Ill. Hort.*, t. 458.

O. BICOLOR, *Lindl.*—This fine species has oval compressed pseudobulbs, three-ribbed on each side, solitary oblong sessile leaves, and divaricate panicles of handsome flowers, which have ovate acute sepals and petals, and a flat bilobed lip, which is very large, deep yellow on the upper side, and almost white underneath, the sepals and petals and the base of the lip being spotted with chestnut-brown. It blooms in September. This will thrive on a block suspended from the roof. Lindley places it as a variety (*bicolor*) of *O. Martianum*, the type of which has whole-coloured yellow blossoms.—*Brazil*.

FIG.—*Bot. Reg.*, 1843, t. 66.

O. BIFOLIUM, *Sims.*—A handsome dwarf-growing species now very rare, having ovate dark green obsoletely hexagonal pseudobulbs, and short lance-shaped keeled deep green leaves, borne in pairs. The slender scapes proceed from the base of the bulbs, and bear elegant nodding racemes of eight or ten showy flowers, which have the small ovate or oblong sepals and petals yellow, barred and spotted with rich chestnut-brown, and the lip large, flat, two-lobed, of a transversely reniform outline, and a bright yellow colour. It produces these flowers in May and June, and they last a long time in perfection. There are two varieties of this plant, one much brighter than the other in the colour of the flowers. It is best grown in a pot, suspended from the roof, and requires to be potted in peat and sphagnum moss; ample drainage should also be given, as it enjoys a liberal supply of water.—*Monte Video*.

FIG.—*Bot. Mag.*, t. 1491; *Veitch's Man. Orch. Pl.*, viii. p. 14.

O. BIFOLIUM MAJUS, *Hort.*—A superb variety of the preceding species, in which the pseudobulbs are much larger, and the habit of the plant altogether more robust. The spike is quite double the length of that of the type, and bears fully double the number of flowers, of which the sepals and petals are brown faintly marked with yellow, and the very large lip is brilliant yellow. They are

produced in May and June, and continue in perfection a long time. It requires the same treatment as the preceding, and, like it, should be placed at the cool end of the *Cattleya* house.—*Monte Video*.

FIG.—*Lodd. Bot. Cab.*, t. 1845.

O. BIFRONS.—See *O. WARSCEWICZII*.

O. BLUNTI.—See *MILTONIA BLUNTI*.

O. BOYDII.—See *O. LURIDUM GUTTATUM*.

O. BRACHYPHYLLUM.—See *O. CEBOLLETA*.

O. BRAUNI, *Regel.*—The origin of this species has not been ascertained, but it appears to be allied to *O. flexuosum*. The pseudobulbs are ovate-elongate, compressed, monophyllous; leaves ovate, acuminate, dark green; the scape is produced from the base of the pseudobulbs, and bears an eight- to ten-flowered spike; the flowers, which are produced in September, measure 1 inch, and are of a golden yellow colour spotted with purple-brown; the lip is bilobed. A fine specimen flowered in 1886 in the Botanic Gardens, St. Petersburg.—*Notice country not known*.

FIG.—*Gartenflora*, 1886, t. 1235.

O. BRUNLEESIANUM, *Rchb. f.*—A very pretty plant, quite distinct from any other species with which we are acquainted; it produces dense upright spikes of bright yellow flowers, which are furnished with a dark sepia-coloured lip. This distinct feature gives the plant a most unique appearance.—*La Plata*.

FIG.—*Orchid Album*, v. t. 206; *Gard. Chron.*, 3rd ser., 1887, i. p. 673, f. 131; *Vitch's Man. Orch. Pl.*, viii. p. 15.

O. CALANTHUM, *Rchb. f.*—A showy, distinct, and free-flowering species, which thrives best potted in peat and placed in the cool house. The pseudobulbs are ovate furrowed, bearing a pair of lance-shaped leaves. The flowers are numerous, and borne on a slender twining panicle, the upper part of which is heteranthous; the sepals are oblong acute, the petals oblong obtuse and hastato-unguiculate, both nearly as long as the lip; the lip is large, reniform, bilobed, with a short broadish isthmus, and behind that a pair of cuneate ovate auricles. The flower is rich golden yellow, and the crest of five papulose bodies tinged with red as well as the column.—*Ecuador*.

FIG.—*Floral Mag.*, t. 384.

O. CALOGLOSSUM, *Rchb. f.*—"A stately species, which in its habit of growth resembles *O. Marshallianum*. It has a large branching inflorescence bearing about thirty flowers, of which the sepals and petals are yellow striped with sepia-brown, those on the petals being remarkably confluent; the lip is brighter yellow with brown blotches in front, the warts of the calli reddish with numerous brownish-red spots all around." We flowered a fine specimen in the Victoria and Paradise Nurseries in August, 1893.—*Brazil*.

O. CANDIDUM.—See *PALUMBINA CANDIDA*.

O. CARTHAGINENSE SANGUINEUM.—See *O. ROSEUM*.

O. CAVENDISHIANUM, *Bateman*.—A very showy and noble species of bold and striking habit, remarkable for the absence of pseudobulbs, the large broad fleshy rich green leaves, together with the stout flower scape, growing out from between a few stout imbricated scaly bracts. The bright yellow flowers are produced in great abundance on the stout, tall branching scapes, and appear in the dull months of winter, a fact which greatly increases its value, for even at that season they retain all their brilliancy for several weeks. The flowers are about an inch in diameter, the sepals obovate-obtuse with the upper one arched, greenish-yellow spotted with bright chestnut, the petals oblong-obtuse wavy and of the same colours, and the lip three-lobed, the lateral lobes roundish unguiculate, the middle one larger reniform deeply emarginate and of a pure bright yellow colour; it has a crest of four prominent tubercles. In *O. pachyphyllum*, which Lindley considers a form of the same plant, the sepals and petals are spotted with crimson. Reichenbach keeps them distinct, and figures in *Xenia* a golden-lipped variety of *pachyphyllum*. It may be grown on a block or in a pot, in the *Cattleya* house, but on account of its size seems to do best in the latter.—*Guatemala*.

FIG.—*Batem.*, *Orch. Mex. et Guat.*, t. 3; *Bot. Mag.*, t. 3807 (*pachyphyllum*); *Xenia Orch.*, i. t. 99, f. 4 (*pachyphyllum chrysoGLOSSUM*); *L'Orchidophile*, 1888, p. 241 (plate); *Veitch's Man. Orch. Pl.*, viii. p. 21.

SYN.—*O. pachyphyllum* (spotted fl.). *O. pachyphyllum chrysoGLOSSUM*.

O. CEBOLLETA, *Swartz*.—This it appears is one of the oldest known *Oncids*, having been described as far back as 1800; it is also very widely distributed in its native country, but not being an attractive plant it has never found much favour with orchid growers, and as a consequence it is not frequently seen in collections. The leaves are terete, exceeding 1 foot in length; flower scapes longer than the leaves, erect, many-flowered; flowers about 1 inch or more in diameter; sepals and petals yellow spotted with reddish-brown, wavy; lip bright yellow, three-lobed. It appears to be a very variable species, and several forms described as specifically distinct have been referred to this species by Lindley.—*Mexico*; *West Indies*; *Brazil*; *Paraguay*.

FIG.—*Bot. Reg.*, t. 1994; *Bot. Mag.*, t. 3568; *Bot. Reg.*, 1842, t. 4 (*longifolium*).

SYN.—*O. juncifolium*, *O. cepula*, *O. brachyphyllum*, *O. longifolium*.

O. CEPULA.—See *O. CEBOLLETA*.

O. CHEIROPHORUM, *Rehb. f.*—A very pretty dwarf-growing species, producing dense slender panicles of small golden yellow sweet-scented flowers. It has small ovate ancipitous pseudobulbs, linear-lanceolate acute leaves, and dense short-branched panicles of flowers, which, though not of large size, should secure the admission of the species to any choice collection on account of its free-blooming properties and its delightful fragrance; the lip is comparatively large, and three-lobed; it flowers from October to December, and should be grown in the *Odontoglossum* house.—*Veragua*; *Volcano of Chiriqui*.

FIG.—*Xenia Orch.*, i. t. 69, f. 1; *Bot. Mag.*, t. 6278; *L'Orchidophile*, 1885, p. 102 (plate); *Lindenia*, iii. t. 126; *Veitch's Man. Orch. Pl.*, viii. p. 23.

O. CHRYSODIPTERUM, *Veitch*.—A handsome species allied to *O. lamelligerum*, acquired by Messrs. J. Veitch & Sons at one of the London Orchid sales.

"Flowers 3 inches across; dorsal sepal cordate orbicular, undulate at the margin, bright chestnut-brown with a narrow yellow border; the lateral two divergent broadly ovate, sub-acute, keeled behind, wholly brown; petals much smaller with a shorter claw, ovate lanceolate, incurved and strongly undulated at the margin, bright gamboge yellow spotted with brown on the basal half only; lip linear reflexed, yellow stained with brown in front of the crest, with two triangular deflexed auricles at the base."—? *West Tropical South America*.

FIG.—*Veitch's Man. Orch. Pl.*, viii. p. 24.

O. CHRYSOPS, *Rehb. f.*—This is allied to *O. bicallosum*. The leaves are said to be short, reddish; flowers racemose; sepals cuneate oblong, light brown; petals broader, undulate, blunt, of the same colour as the sepals; lip bright yellow, middle lobe large, reniform.—*Native country not stated*.

O. CHRYSORHAPIS, *Rehb. f.*—A species allied to *O. cornigerum*, and imported by Messrs. F. Sander & Co. Pseudobulbs fusiform, terete, dark green, 3 to 4 inches long; the leaves are from 6 to 7 inches long, cuneate oblong-lanceolate; sepals and petals light sulphur-yellow spotted with dark brown; lip yellow, the front lobe very large reniform.—*Brazil*.

O. CHRYSOTHYRSUS, *Rehb. f.*—A very showy and abundant-flowered *Oncid*, of free and compact growth, seldom attaining more than a foot in height, the pseudobulbs being 2 to 3 inches high, oblong compressed, and at length ribbed, and supporting a pair of oblong-acute light green leaves; the scape is some 2 to 3 feet in length, terminated by a thyrsoid panicle of numerous showy and lovely flowers, of which the small oblong-ligulate sepals and petals are pale green, with a few bars of purplish-red, and the lip is large, reniform bilobed and bright yellow, with a few crimson lines on the claw, above which is a crest consisting of a depressed callus, three-lobed at the apex, and having compressed lamellae in front. It succeeds well upon a block. The plant flowers during the autumn months, and remains for a long time in bloom.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 5.

O. CILIATUM.—See *O. BARBATUM*.

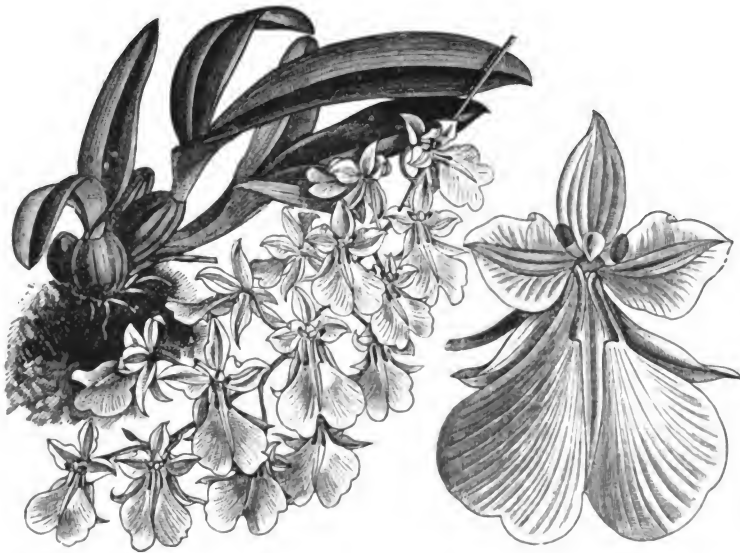
O. CONCOLOR, *Hooker*.—A very distinct and beautiful species, with small tufted ovate or ovate-oblong compressed ribbed pseudobulbs, and a pair of subcoriaceous oblong linear or ligulate bright green leaves. The flowers are large and of a pure yellow, $1\frac{1}{2}$ to 2 inches in diameter, produced upon radical scapes in long pendulous racemes, the sepals being lanceolate, and the lip large flat cuneate sub-panduriform emarginate, and marked at the base with a pair of orange-coloured lamellae. It blooms in March and April, running on into May or sometimes into June, the two latter being the principal exhibition months. This is a fine subject for growing in baskets in the cool house, where it succeeds best.—*Brazil*; *Organ Mountains*.

FIG.—*Bot. Mag.*, t. 3752; *Id.*, t. 4454; *Revue Hort.*, 1881, p. 30, with tab.; *Orchid Album*, i. t. 1; *L'Ill. Hort.*, 3rd ser., 1883, xxx. t. 487; *Reichenbachia*, i. t. 30; *Lindenia*, v. t. 205; *Veitch's Man. Orch. Pl.*, viii. p. 26.

SYN.—*Cyrtorchilum citrinum*.

O. CORNIGERUM, *Lindl.*—A highly ornamental species, and one that is very distinct both in habit and appearance. The pseudobulbs are oblong sulcate, about 3 inches long, bearing a solitary leaf which is oval and striate, deep green, and of a peculiarly thick and fleshy texture. The flowers are small but numerous, and are produced in a very elegant drooping close panicle on a slender scape upwards of a foot in length; this panicle is developed after the growth is mature, and on it are borne the beautifully gay flowers, which are yellow, spotted with deep red; its season of flowering is April and May. The lip is panduriform (or obovate sub-repand), wavy, with a horn-shaped lobe on each side at the base.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1542; *Bot. Mag.*, t. 3486.



ONCIDIUM CONCOLOR.

O. CRISPUM, *Loddiges*.—A remarkably handsome large-flowered species of ornamental character. The pseudobulbs are oblong, sulcate, and rugose, each supporting a pair of oblong-lanceolate coriaceous obscurely-nerved leaves, and a tall scape which bears either a raceme or panicle of large showy spreading flowers, from 2 to 3 inches across, often from fifty to sixty in a spreading panicle. The sepals are oblong-obtuse, narrowed below, wavy or crisped, of a greenish-brown, spotted; the petals are broadly obovate-obtuse, also crisped, of a rich brown, the claw yellow striped with brownish-red; and the lip is crisped, large, roundish cordate, of the same colour as the petals, its base contracted, yellow spotted or barred with red, and bearing two small yellow horn-shaped side lobes, with a deltoid three-lobed crest, which is yellow spotted with red, between them; the column is also yellow. This species blooms at different times in the year, and lasts three or four weeks in beauty. It requires to be grown on a block of

wood in the cool house, and should never be allowed to get dry, as it enjoys plenty of moisture.—*Brazil; Organ Mountains.*

FIG.—*Loddiges, Bot. Cab.*, t. 1854; *Bot. Mag.*, t. 3499; *Bot. Reg.*, t. 1920; *Flora des Serres*, t. 2148; *Knowles & Westc. Fl. Cub.*, t. 64; *Maunder, Botanist*, i. t. 26; *Warner, Sel. Orch. Pl.*, ii. t. 26; *Hook. First Cent. Orch. Pl.*, t. 78; *Veitch's Man. Orch. Pl.*, viii. p. 28.

O. CRISpum GRANDIFLORUM, *Hort.*—A very fine variety of the preceding. Its blossoms are very large, being twice the size of those of *O. crispum*, and of a deep rich brown colour; the sepals rather narrow and very wavy, the broad flat petals and lip with a narrow edging of golden-yellow, and the yellow colour of the claw extended to the base of the lip, where it forms a large radiating blotch. It succeeds best on a block, and requires a good supply of water at the roots.—*Brazil.*

FIG.—*Floral Mag.*, t. 485; *Journ. of Hort.*, 1889, xix. p. 39, f. 5.

O. CRISpum MARGINATUM.—See *O. FORBESII*.

O. CRISTATUM, *Rolfe*.—A species allied to *O. Schillerianum*, introduced from Brazil by the Horticulture Internationale. It is described in the *Kew Bulletin*, 1892, p. 211, as follows:—"The sepals and petals are reflexed, undulate, and of a clear bright yellow; the lip a little deeper yellow, with a row of suffused red-brown dots on either side of the crest, and the column-wings deep yellow." Flowers in April.—*Brazil.*

O. CROCODILICEPS, *Rchb. f.*—A pretty little species with small ovoid, wrinkled pseudobulbs; leaves cuneate-oblong, acute; scape many-flowered; sepals and petals light greenish-yellow, covered with longitudinal stripes and blotches of cinnamon-brown; lip obcordate, white, with a tuft of hair at the base; striped with lilac in front of the callus, yellow and spotted with the same colour in the front portion; "the anther is very large, comparable to a broad crocodile's head."—*Mexico.*

O. CROESUS, *Rchb. f.*—A pretty dwarf-growing species of compact tufted habit, whose flowers are somewhat suggestive of those of a pansy. The pseudobulbs are small oblong-ovoid, tapering upwards, compressed and supporting a pair of light green ligulate bluntish leaves, some 4 to 6 inches long, the erect scapes not taller than the leaves, bearing some three or four flowers, an inch across in the spread of the petals, and with a lip $\frac{3}{4}$ inch broad; the sepals and petals are deep purplish-brown, and the lip has two smaller yellow roundish lateral lobes and a broad golden-yellow reniform front lobe, the crest prominent, deep velvety black. It blooms very freely during summer, and continues a considerable time in full beauty. The plant succeeds best in the *Cattleya* house, either suspended from the roof upon a block, or potted in peat and sphagnum moss. It comes very close to *O. longipes*.—*Brazil; Organ Mountains.*

FIG.—*Floral Mag.*, 2nd ser., t. 40; *The Garden*, 1889, xxxv. p. 580, t. 706.

O. CRUENTUM.—See *O. PELICANUM*.

O. CUCULLATUM, *Lindl.*—Although a small-flowered species, this is a very beautiful one. It is a dwarf-growing plant with oval obtuse costate pseudobulbs.

and oblong-lanceolate leaves, flat and equalling the scape, which bears the charming flowers in nodding racemes, rarely in panicles. The upper sepal and petals are oval, and together with the connate lateral sepals are rose colour, and the lip cordato-panduriform, dilated and bilobed at the apex, reddish-purple spotted with deep purple. These flowers are produced in the spring months, and last a long time in perfection. There are many varieties differing very much in colour; the figure in *Flore des Serres* shows a form with a very broad rosy lilac lip spotted with dark crimson. This species will do well in the cool house with *Odontoglossums*. Flowers in spring.—*New Grenada*, at 8,700 feet elevation.

FIG.—*Paxton, Fl. Gard.*, iii. t. 87; *Lem. Jard. Fl.*, t. 317; *Flore des Serres*, t. 835; *Lindenia*, ii. t. 81; *Veitch's Man. Orch. Pl.*, viii. p. 30.

SYN.—*Leochilus sanguinolentus*.

O. CUCULLATUM FLAVIDUM, *Hort.*—This is a distinct and very desirable form, similar in habit to the type. The flowers have the sepals and petals yellow blotched with brown, and the lip purple margined with white. It must be placed in the coolest house; the flowers are produced in spring, and continue a long time in beauty.—*New Grenada*.

O. CUCULLATUM MACROCHILUM, *Lindl.*—An entirely different-looking plant from the previous one, but equally beautiful, being, according to Lindley, "the finest Alpine Orchid yet discovered." It grows about a foot high, and has larger pseudo-bulbs; the scapes also are stronger, the flexuose racemes being 2 feet in length, and well furnished with its beautiful flowers, which have the sepals and petals of a rich plum colour and crimson, and the lip, which is $1\frac{1}{2}$ inch broad, mauve spotted with dark violet. It must be grown in the coolest house.—*Quintinian Andes*, at 13,000 feet elevation.

O. CUCULLATUM PHALAE-NOPSIS.—See *O. PHALAE-NOPSIS*.

O. CURTUM, *Lindl.*—A very handsome and distinct species, of compact growth, somewhat resembling *O. crispum* in foliage and in the shape of the

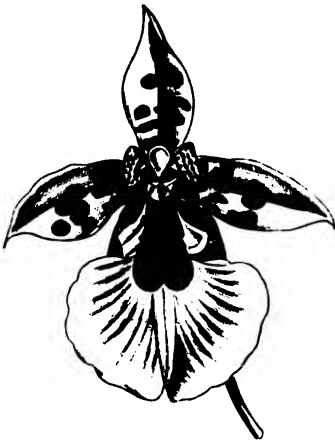


ONCIDIUM CURTUM.
(From the *Garden*.)

pseudobulbs. The showy flowers are produced on elongated panicles which proceed from the base of the bulb, the sepals and petals obovate obtuse yellow barred and blotched with cinnamon-brown, the latter undulated, the roundish bilobed undulated lip golden yellow having a broad margin of cinnamon-brown, with golden auricles at the base on each side the five-lobed crest, around which many warts are scattered. It blooms during the spring months, and lasts several weeks in perfection. The plant will succeed best either in a basket or on a block with plenty of drainage.—*Brazil*.

FIG.—*Bot. Reg.*, 1847, t. 68.

O. DASYTYLE, *Rchb. f.*—A beautiful dwarf-growing species with ovoid ampituous rugose pseudobulbs, from which proceed a pair of linear-lanceolate leaves 4 inches long, and a short slender peduncle terminated by a few gay blossoms, of which the incurved sepals and lanceolate petals are whitish-yellow with handsome maroon-brown spots, and the dilatately reniform anterior blade of the lip is sulphur, the small side lobes marked with oblique chestnut-brown bars, while at the base is a beautiful elongated obcordiform callus of a distinct blackish-purple, from which dark purple veins radiate over the disk. It produces its flowers during the months of January and February, and is to be regarded as rather a gay little plant of the smaller-growing section. This species should be grown in the cool house suspended from the roof. Introduced by us in 1872.—*Brazil: Organ Mountains*.



ONCIDIUM DASYTYLE.

FIG.—*Bot. Mag.*, t. 6494; *Journ. of Hort.*, 1887, xv. p. 496, f. 58.

O. DENTATUM.—See *O. MICROPOGON*.

O. DETORTUM, *Rchb. f.*—A handsome species of the *lamelligerum* section, which was first flowered by Mr. F. Sander. The leaves are broad, oblong, acute; panicles large, upwards of 5 feet in length; flowers of the shape of *O. serratum*, but a little smaller; sepals shortly unguiculate auriculate, cuneate wavy, light brown, the dorsal one with a little yellow at the apex; petals with shorter claws, wavy, yellow with brown spots; lip with two triangular side lobes and a ligulate acute midlobe; seven parallel keels at the base.—*Native country not stated*.

O. DIADEMA.—See *O. SERRATUM*.

O. DIVARICATUM, *Lindl.*—A small but abundant-flowered species, with roundish compressed monophyllous pseudobulbs, oblong obtuse concave coriaceous leaves, and scapes 3 to 4 feet long, bearing a divaricate panicle of small flowers produced during the summer months, and continuing in perfection a long time; the sepals and petals are obovate obtuse yellow with the basal half red, and

the lip has roundish lateral lobes and an intermediate roundish sub-cordate emarginate lobe of a pale yellow spotted with red; the crest forms a pubescent four-lobed cushion; this, when well grown, is a useful plant for all purposes; pot culture suits it best.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1050; *Lodd. Bot. Cab.*, t. 1212; *Paxton, Mag. Bot.*, iii. p. 4, with tab.; *Rehdb. Fl. Erot.*, t. 93.

O. ELEGANTISSIMUM, *Rehdb. f.*—Although this species was described in 1877, it still appears to be somewhat rare in collections. It is an elegant plant producing short broad-ribbed glaucous pseudobulbs, which carry two leaves each; flower scapes in the way of *O. curtum*; sepals brown with narrow yellow bands; petals yellow spotted with brown; lip bright yellow, front lobe marbled and dotted with light brown; the calli being bordered with black-purple. Flowers in summer.—*Native country not stated*.

O. EURYCLINE, *Rehdb. f.*—This pretty dwarf-growing species is very distinct. It has ligulate obtuse costate pseudobulbs, solitary cuneate-ligulate leaves, and two-flowered peduncles; the flowers have the sepals and petals light reddish ochre with a few dark bars at their base, the lateral sepals being a little longer than the lip, which is yellow with numerous brown spots at the base, having rounded retrorse basilar lobes or auricles, and a cordate reniform bilobulate anterior lobe. It flowers in December. It was first bloomed by W. E. Brymer, Esq., Ilington House, Dorchester.—*Venezuela*.

O. EUXANTHINUM, *Rehdb. f.*—A very pretty species belonging to the group represented by *O. bifolium*, and requiring similar treatment. The pseudobulbs are 2 to 3 inches long, ellipsoid compressed and furrowed, bearing a pair of linear ensiform acute keeled leaves; the numerous flowers grow in ample panicles, and are about 1 inch across, and very showy; the sepals and petals are small, yellow, dotted over with red, the lip large shortly clawed, with the claw protruded and winged, three-lobed, the lateral lobes large roundish crenate, the middle lobe much longer reniform bilobed, with numerous red spots on the disk between the lateral lobes, the rest of the surface rich clear yellow; the two column wings are spreading, yellow with red spots; the broad lip, large rounded side lobes, and conspicuous spotting make the flowers not only pleasing but showy. It blooms during the autumn months.—*Brazil*.

FIG.—*Bot. Mag.*, t. 6322.

O. EXCAVATUM, *Lindl.*—A robust-growing species with light green pseudobulbs, oblong-ligulate leaves, and long branched scapes bearing an abundance of brightly-coloured flowers, the sepals and petals being rich yellow profusely blotched with cinnamon brown near the base, and the pandurate lip also deep golden yellow blotched only on the crest, which is very convex and excavated in front, the base being cordate, and the tip rounded and emarginate. According to Lindley, *O. aurosum* can scarcely be distinguished from this plant, though its flowers are perhaps a little larger, its panicle more compact, and its crest very rugose. It should be potted in good fibrous peat, and placed in the cool house; flowers in late autumn.—*Peru*.

FIG.—*Bot. Mag.*, t. 5293; *L'Il. Hort.*, 3rd ser. t. 34 (*aurosum*); *Lindenia*, v. t. 221; *Veitch's Man. Orch. Pl.*, viii. p. 36.

O. EXCAVATUM DAWSONI, *Williams*.—Though bearing some resemblance to *O. excavatum*, this variety is very much stronger and more robust in all its parts. The branching scapes are 5 feet long, and upon these its large lovely bright yellow and rich brown flowers are borne in great profusion. When well managed the scapes will often produce upwards of a hundred flowers, and when seen in this state it is truly a noble object.—*Peru*.

O. FALCIPETALUM, *Lindl.*—A species belonging to the *microchilum* group, producing a "scrambling panicle 20 feet long; flowers 3 inches in diameter; sepals brown, margined with yellow; petals yellow, spotted with brown on the lower halves; lip linear-reflexed, purple-brown, and having a cluster of sharp tubercles in front of the crest."—*Venezuela*.

O. FIMBRIATUM, *Lindl.*—This old and rare species was described by Lindley in 1832 from a drawing of a single flower. It seems to have remained unknown to collectors until quite recently. The pseudobulbs are oblong, two-leaved; leaves linear-oblong; scape many flowered, from 2 to 3 feet in length; sepals and petals bright yellow, with transverse red bars; lip yellow.—*Brazil*.

O. FLEXUOSUM, *Sims*.—A pretty free-blooming and well-known old species producing its showy yellow-spotted flowers in abundance on large branching panicles. It has oval compressed two-leaved pseudobulbs, and oblong-lanceolate striated leaves. The flowers have the very small sepals and petals yellow barred with chestnut-brown, and the large flat lip transversely roundish oblong and bilobed, yellow speckled over with minute chestnut-red dots. The crest is pulvinate with three ridges in front; it blooms at different times of the year, and continues for several weeks in flower. This plant is invaluable for cutting purposes, the small bright yellow flowers producing a charming effect when mixed with other flowers and foliage. There are two varieties of this plant; the one called **MAJUS**, which has much larger flowers than the



ONCIDIUM FLEXUOSUM.

other, though of the same colour, is scarce, and is best grown in a pot with moss in the warm house.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2203; *Lodd. Bot. Cab.*, t. 424; *Rehb. Fl. Exot.*, t. 94; *L'Orchidophile*, 1888, p. 15 (plate); *Gardening World*, vii. p. 53.

O. FORBESII, *Hooker*.—A truly handsome dwarf species, closely related to *O. crispum*. It has rather small pseudobulbs, which are oblong blunt compressed and furrowed, and terminated by a solitary lanceolate acute leathery dark green leaf. The scape, which is radical, often springing from the axil of an accessory leaf, bears a many-flowered erect panicle of showy flowers, which are about 2 to 2½ inches across, very distinct, the obovate sepals and the much larger undulated petals bright chestnut-brown, broadly margined with broken golden yellow lines, as is also the lip, which is clawed, larger than the petals, and flabelliform; it blooms in November. This plant is best grown on a block with moss in the cool house.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3705; *Orchid Album*, iii. t. 104; *Gard. Chron.*, N.S., xi. p. 525, ff. 71, 72; *Veitch's Man. Orch. Pl.*, viii. p. 39.

SYN.—*O. crispum marginatum*.

O. FORBESII BORWICKIANUM, *Rchb. f.*—A variety distinguished from the type by the lip being spotted and blotched all over, instead of having the broad patch at the base. It was flowered by Mr. Borwick, of Walthamstow.

O. FORBESII MAXIMUM, *Hort.*—A splendid variety with immense flowers measuring upwards of 3 inches across, was exhibited by M. le Comte de Bousies at a meeting of L'Orchidéeenne in Brussels.

FIG.—*Lindenia*, iv. t. 164.

O. FUSCATUM.—See *MILTONIA WARSCEWICZII*.

O. GALEOTTIANUM.—See *ODONTOGLOSSUM CITROSUM*.

O. GALLO-PAVINUM.—See *O. BATEMANIANUM*.

O. GARDNERI, *Lindl.*—A most charming and free-flowering species, that should be grown by every admirer of Orchids. It is nearly allied to *O. curtum* and *O. praetextum*, and is a compact growing plant, having oblong-ovate furrowed pseudobulbs, and dark green oblong-lanceolate leaves, which are purple on the under side; the handsome flowers are produced in large branching panicles, and are deliciously fragrant; the sepals are obovate, and the petals twice as large, roundish, wavy, clawed, both of a pale bright chestnut-brown margined with pale yellow; the lip is large three-lobed, the middle lobe large, transversely oblong, emarginate, wavy, of a bright golden yellow irregularly margined with oblong blotches of bright brown. It blooms during the months of June and July, and lasts for several weeks in perfection. It should be grown in the cool house.—*Brazil: Organ Mountains.*



ONCIDIUM GARDNERI.

(From the *Gardeners' Chronicle*.)

FIG.—*Orchid Album*, i. t. 12; *Gard. Chron.*, N.S., xvi. p. 86, f. 23; *Floral Mag.*, 2nd ser., t. 401; *Veitch's Man. Orch. Pl.*, viii. p. 40.

O. GIREOUDIANUM.—See *BRASSIA GIREOUDIANA*.

O. GRAVESIANUM, *Rolfe*.—A pretty species, allied to *O. praetextum*. Pseudobulbs elliptic-oblong, 3 inches high; leaves elliptic-oblong, obtuse, 4 inches long. It produces branched panicles; flowers measuring 2 inches across; sepals brown barred with yellow, the lateral ones united at the base, the free ends diverging widely; petals obovate, brown streaked sparsely with yellow; lip 1 inch long, pandurate, yellow spotted with brown at the base, the front lobe with a brown border.—*Brazil: Pernambuco.*

FIG.—*Gard. Chron*, 3rd ser., 1892, xi. p. 651, f. 94.

O. HAEMATOCILUM, *Lindl.*—A compact growing and handsome plant, similar in habit to *O. Lanceunum*. The pseudobulbs are absent or obsolete, the short thick fleshy oblong acute dark green red-spotted leaves springing directly from the crown. The scape is radical, deep purple-red, erect, bearing a panicle of moderate-sized flowers, of which the oblong sepals and petals are greenish-yellow blotched with bright chestnut, and the transversely reniform lip is of a deep sanguineous crimson, the margin yellow mottled with deep rose crimson, and the claw and basal auricles of a deep magenta-rose. This plant is seldom met with in collections, being very scarce. We have seen it very fine in the collection of G. W. Law Schofield, Esq., of Rawtenstall, near Manchester. It blooms in November.—*Guatemala*.

FIG.—*Orchid Album*, i. t. 32; *Paxton, Fl. Gard.*, i. t. 6.

O. HARRISONIANUM, *Lindl.*—This was first flowered in the collection of Mrs. Harrison, of Liverpool, in 1832. It is a dwarf growing species, having compressed greyish-green pseudobulbs and leaves of the same colour. The flowers are produced on spikes about 1 foot long, measure about $\frac{3}{4}$ inch in diameter, brilliant yellow, stained with rich crimson. Flowers in May.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1569; *Revue Hort. Belge*, 1892, p. 253, t. 22.

SYN.—*O. pallidum*; *O. pantherinum*; *O. pentaspilum*; *O. ramiferum*; *O. acrobotryum*.

O. HASTATUM, *Lindl.*—An old species which was first referred to *Odontoglossum*, but Lindley first pointed out its true characters as an *Oncidium*. Pseudobulbs ovoid; leaves oblong-lanceolate about 9 inches long; flowers $1\frac{1}{2}$ inch across; sepals and petals lanceolate, acute, brown, with yellow-green bars and margins; lip three-lobed, the front lobe red passing into greenish-yellow at the apex, the lateral lobes yellowish-white. Lindley describes two varieties, **FLAVESCENS**, with straw-coloured lip, and **ATRATUM**, having the lip claret colour.—*Mexico*.

FIG.—*Ann. de Gand*, t. 271 (*Odontoglossum phyllochilum*); *Batem. Orch. Mex. et Guatem.*, t. 20 (*Odontoglossum hastatum*).

SYN.—*Odontoglossum phyllochilum*; *Odontoglossum hastatum*.

O. HENCHMANNI.—See *O. ROSEUM*.

O. HOLOCHRYSUM, *Rehb. f.*—Though long known to botanists, this species, like many more fine things, has only of late years become known to cultivators. The plant is similar in habit to *O. bifolium*, having the pseudobulbs oblong, sulcate, and beautifully spotted; the two leaves are thickish ligulate acute, and the flowers are in secund racemes, of a rich golden-yellow, set very densely upon the spike, the lip being trifid with the large middle lobe clawed reniform and bilobed. No collection should be without this charming plant, which grows freely in a low temperature.—*Peru*.

O. HÜBSCHII, *Rehb. f.*—This novelty was received in 1883 by Baron Hruby, of Pekau, from Mr. Hübsch, to whom it is dedicated. Reichenbach describes it as follows in the *Gardeners' Chronicle*, 1885, n.s., xxiv. p. 650 :—"It has an exceedingly branched pyramidal panicle; the bipartite orange-coloured wings of the column give the best character; the lip is narrower in front than at the base, and bears a peculiar system of calli, sulphur-coloured with some brown tint."—*Ecuador*.

O. HUNTIANUM.—See *O. ROSEUM*.

O. HYPHAEMATICUM, *Rehb. f.*—A beautiful little plant, with small oblong depressed three-ribbed pseudobulbs, bearing a single oblong-lanceolate obtuse leaf. The flowers are large, but somewhat laxly set upon the branching raceme; the sepals and petals are cuneate-oblong crispy of a chestnut-brown with a yellow margin, the lip, which is reniform in the anterior part with an apiculus, being of a rich deep yellow. The flowers of this species are very showy, as, in addition to the colours of the inner surface, they are blood-red on the outer side. It should be grown in peat and sphagnum, and kept in the cool house. The flowers are produced during the latter part of summer and beginning of autumn.—*Ecuador*.

O. INCURVUM, *Barker*.—A very pretty and distinct dwarf Orchid, with ovate ancipitous three- or four-ribbed pseudobulbs, two or three ensiform leaves, and erect scapes 2 feet high, bearing a racemose panicle of the elegant sweet-scented flowers, which have the sepals and petals linear-lanceolate wavy and quite free, white cross-banded with reddish-purple and the concave roundish lip pure white. It flowers during autumn and winter, and lasts long in beauty. This plant is best grown in a pot with peat; it is indeed a very fine species when well grown. We have seen a specimen growing in a cool house bearing twenty-five spikes, and a charming object it was. A magnificent specimen of this plant was exhibited by G. Douglas, Esq., Esk Bank, Dalkeith, in September, 1893, before the Caledonian Society's Show in Edinburgh. It was a wonderful example of cultivation, being several feet in diameter and stated to have consisted of forty spikes, containing 12,000 flowers. It flowers in late summer.—*Mexico*.

FIG.—*Batem. Orch. Mex. et Guat.*, t. 29; *Bot. Mag.*, t. 4824; *Bot. Reg.*, 1845, t. 64; *L'Ill. Hort.*, t. 49.

SYN.—*O. albo-violaceum*.

O. INCURVUM ALBUM, *Linden*.—This is a chaste and distinct variety of the foregoing, having pure white flowers, in other respects resembling the type. It was exhibited by W. Lee, Esq., of Downside, Leatherhead, at South Kensington, in October, 1883. Its flowering season is September and October.—*Mexico*.

FIG.—*L'Ill. Hort.*, 3rd ser., 1882, xxix. t. 444.

O. INTERMEDIUM, *Knowles et Westcott*.—A handsome and distinct plant, compact in growth, producing from a creeping rhizome small dwarf pseudobulbs, each of which bears a single erect, stiff, fleshy leaf, which is oblong-acute, carinate beneath and exceeding a foot in length. The flower spike is erect and reaches about 18 inches or more in length, bearing a much branched, many-flowered raceme; sepals spatulate; petals obovate-oblong, undulate; both sepals and petals yellow spotted and barred with chestnut-brown; lip three-lobed, lateral lobes short, revolute and obtuse, middle lobe reniform, flat and spreading.—*Cuba*.

FIG.—*Knowles & Westcott Floral Cab.*, t. 60; *Orchid Album*, viii. t. 345.

SYN.—*O. luridum intermedium*.

O. IONOSMUM.—See *O. TIGRINUM UNGUICULATUM*.

O. IRIDIFOLIUM, *Lindl.*—A lovely miniature species, devoid of pseudobulbs, the ensiform equitant leaves being produced directly from a thin creeping rhizome much resembling in growth an *Iris*, from which it derives the specific name. Leaves about 2 inches long, deep green; scapes one-flowered; flowers measuring 1 inch across the longest diameter, that is from the tip of the dorsal sepal to the base of the lip; sepals and petals very small linear-lanceolate; lip very large in proportion to the size of the flower, measuring $\frac{3}{4}$ inch in breadth and a little less than an inch in height, three-lobed, the side-lobes narrow spatulate spreading, the mid-lobe deeply bipartite; the flowers are pale straw-yellow spotted and barred minutely with bright red. This pretty species is of very wide distribution, being found from Panama and Guatemala to Guiana, Trinidad, Brazil, U. S. of Colombia and Venezuela.

FIG.—*Lindenia*, iv. t. 169.

O. JANEIRIENSE.—See *O. LONGIPES*.

O. JONESIANUM, *Rchb. f.*—A very pretty and distinct species. The pseudobulbs are very small, densely clustered, monophyllous; the leaves are slender and erect, subulate, channelled on the upper surface, deep green; and the flowers grow in drooping racemes, very elegant in character. The sepals and petals are wavy obovate-cuneate, of a pale greenish straw-colour having



ONCIDIUM JONESIANUM.

numerous, sometimes confluent, dark sepia-brown blotches; the lip is pure white, wavy, transversely reniform, bilobed, the claw having on each side a roundish yellow auricle with small purple dots, brown on the anterior border, and a prominent whitish crest dotted with red in front. It flowers from September onwards to December, and lasts for some time in beauty. It should be grown in the warm house.—*Paraguay*.

FIG.—*Orchid Album*, iv. t. 183; *Lindenia*, ii. t. 72; *L'Orchidophile*, 1886, p. 50 (plate); *The Garden*, 1887, xxxi. p. 148, t. 583; *Bot. Mag.*, t. 6982; *Gartenflora*, 1888, t. 1272; *Reichenbachia*, i. t. 21, f. 1; *Revue Hort. Belge*, 1889, p. 7, t. 1.

O. JONESIANUM FLAVENS, *Rehb. f.*—A handsome and distinct variety, differing from the type by having greenish-yellow spots on the sepals and petals. A fine specimen of this flowered in the collection of Thos. Statter, Esq., of Stand Hall, Whitefield, Manchester.—*Paraguay*.

FIG.—*Orchid Album*, viii. t. 360.

O. JONESIANUM PHAEANTHUM, *Rehb. f.*—One of the many gems of Sir Trevor Lawrence's rich collection. The flowers are devoid of spots, the sepals and petals are purplish-brown, and the side laciniae of the lip bright yellow.

FIG.—*Reichenbachia*, i. t. 21, f. 2.

O. JUNCIFOLIUM.—See *O. CEBOLLETA*.

O. KEILIANUM.—See *BRASSIA KEILIANA*.

O. KRAMERIANUM, *Rehb. f.*—A very handsome species, somewhat resembling *O. Papilio*. The pseudobulbs are small roundish obtuse, four- to seven-angled, the leathery leaves cuneate oblong acute dull green irregularly streaked with dark purple; the scape is long and knotty-jointed, and bears flowers resembling those of *O. Papilio*; the dorsal sepal and petals are narrow linear, all turned upwards, crispy, yellow at the base, dark brown on the upper part; the lateral sepals deflexed, ligulate-acute, strongly undulated, pale yellow heavily spotted with brown; and the lip, which is beautifully undulated at the edge, is cordate-pandurate, of a pale yellow with a single irregular row of brown spots near the edge. It keeps blooming from the top of the spike for years, and it is often in beauty. This species is best grown in a basket or on a block, and requires the temperature of the *Cattleya* house to grow and flower it successfully.—*Central America*.



ONCIDIUM KRAMERIANUM.

FIG.—*Flore des Serrres*, t. 1956; *Jennings, Orch.*, t. 11; *Floral Mag.*, t. 465; *Puydt, Lea Orch.*, t. 31; *Xenia Orch.*, i. t. 33; *Lindenia*, vi. t. 246; *Veitch's Man. Orch. Pl.*, viii. p. 48.

O. KRAMERIANUM RESPLENDENS, *Rehb. f.*—A fine and distinct variety, described by Reichenbach as follows:—"A splendid variety with much larger flowers, brighter colours, and the wonderfully wavy anterior lip, but no trace of the usual brown margin; the callus of the lip is distinct by being longer, yellow at the base and at the apex, white in the middle, with purple-mauve partly thicker bars, while the base and top are adorned with purple-brown bars and spots." It flowered in the nurseries of Mr. William Bull, Chelsea.

O. LAMELLIGERUM, *Rehb. f.*—A very noble and handsome species in the way of *O. macranthum*, but with larger flowers. These are produced on long branching spikes, and have the dorsal sepal reniform, wavy, stalked, deep brown

bordered with yellow, the inferior sepals also stalked, oblong, much longer, the base cuneate on one side and semi-hastate on the other; the crispy petals are suddenly hastate-oblong obtuse undulated, pale yellow spotted with brown towards the base; and the lip is similar in form to that of *O. macranthum*,



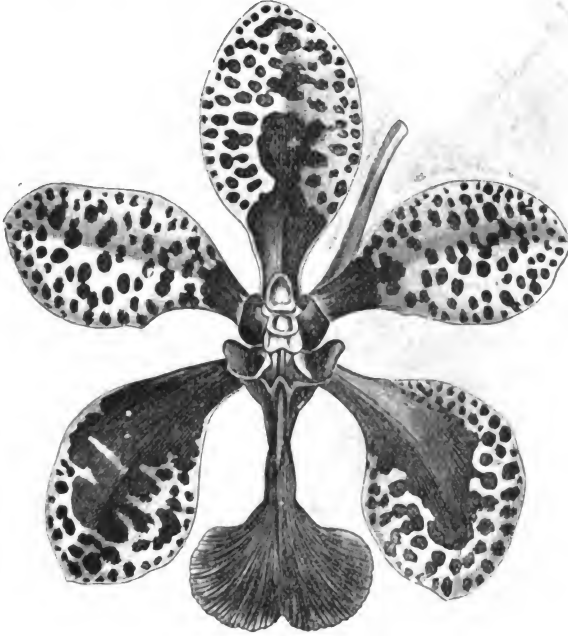
ONCIDIUM LAMELLIGERUM.

trifid, with the lateral lobes triangular, and the middle lobe elongate linear-lanceolate. We saw a fine specimen of this in the collection of C. Dorman, Esq., of Sydenham. It flowers during the summer months, and should be grown in the cool house.—*Ecuador*.

FIG.—*Orchid Album*, vii, t. 315; *Lindenia*, vi, t. 278.

O. LANCEANUM, *Lindl.*—A remarkably handsome and distinct species, one of those which are not furnished with pseudobulbs, but whose leaves and roots spring direct from the short knotty rootstock. The leaves are about a foot long, broadly oblong acute, leathery in texture, of a light green freely spotted with purple; the stiff erect flower scape grows a foot or more in height, and supports a rigid panicle, whose short branches sometimes assume a corymbose and sometimes a racemose arrangement; the flowers are $1\frac{1}{2}$ inch across, greenish-yellow, brighter in the centre, closely blotched with crimson; the lip is broad and flat, of a rich bright violet, the basal part, where it is expanded into a pair of angular teeth, deeper violet; the flowers have a rich spicy odour, recalling that of the garden pink, and they are produced during the summer months, lasting four or five weeks in good condition, if kept free from damp. This is best grown

in the East India house on a block or in a basket, with moss or peat, and makes a splendid plant for exhibition; but we seldom see it in good condition.—*Guiana*; *Surinam*.



ONCIDIUM LANCEANUM.

FIG.—*Trans. Hort. Soc. Lond.*, 2nd ser., ii. t. 5; *Bot. Reg.*, t. 1887; *K. & W. Floral Cab.*, t. 79; *Paxton, Mag. Bot.*, iv. p. 169, with tab.; *Flore des Serres*, tt. 1842—3; *Puydt, Les Orch.*, t. 32; *Hart. Parad.*, i. t. 12 (*superbum*); *Gard. Chron.*, N.S., xxi. p. 609, f. 118; *The Garden*, 1886, xxix. p. 328, t. 539; *Lindenia*, i. t. 16 (*var. superbum*); *Reichenbachia*, ii. t. 73; *Vitchok's Man. Orch. Pl.*, viii. p. 50.

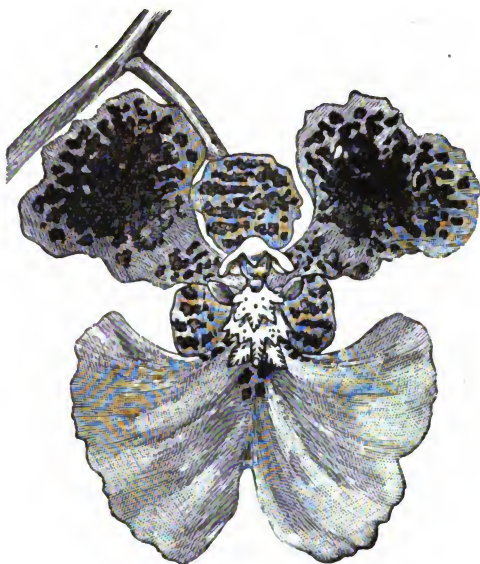
O. LANCEANUM LOUVREXIANUM, *Rehb. f.*—A most chaste and beautiful variety of this grand old species, from which it differs in that the lip, instead of being wholly mauve-coloured, has the expanded apical lobe of a pure white, which forms a fine contrast to the deep violet of the basal portion. It is named in honour of M. D. Massange de Louvrex, Marche, Belgium. The plant flowers during the summer months.—*Guiana*.

FIG.—*Orchid Album*, iii. t. 129.

O. LARKINIANUM, *Gower*.—Of this handsome *Oncidium* only one specimen is known to exist in cultivation, of which J. Larkin, Esq., of Delrow, Watford, is the happy possessor. We believe it is a natural hybrid, perhaps between *O. Gardnerianum* and *O. Marshallianum*. The pseudobulbs are oblong-obtuse ribbed, bearing two lanceolate acute leaves from 6 to 9 inches long; scape radical, many-flowered, flowers large and showy, measuring 2 inches across or more; sepals yellow, transversely streaked with bright chestnut-brown; petals roundish in outline, chestnut-brown, with a marginal border of rich yellow,

interrupted by streaks and spots which coalesce with the central portion; lip clawed, deeply bilobed in front, lobed and unclawed at the edges, front lobe

clear rich yellow, the claw spotted and dotted with chestnut-brown, the side lobes small, tipped with yellow.—*Brazil*.



ONCIDIUM LARKINIANUM.
(From the *Journal of Horticulture*.)

FIG.—*Orchid Album*, ix. t. 405; *Journ. of Hort.*, 1891, xxii. p. 427, f. 78.

O. LAWRENCEANUM.—See *BRASSIA LAWRENCEANA*.

O. LEOPARDINUM, Lindl.

—A very free-flowering and pretty species, of compact-growing habit. It produces its showy flowers in large loose panicles some 3 feet high; they are yellow with very distinct dark brown bands on the sepals and petals, and at the base of the lip, which has the middle lobe unguiculate transversely emarginate, and the base auriculate.—*Peru*.

O. LEOPOLDIANUM, Rolfe.—A handsome introduction of the Horticulture Internationale, and dedicated to H.M. Leopold II., King of the Belgians. The pseudobulbs are fusiform, from 4 to 5 inches high, one or two-leaved; scape branched, many-flowered; flowers 2 inches across, sub-regular; sepals and petals pure white with a rosy-purple disk; lip narrow triangular, deep rosy-purple, with a yellow crest.—*Andes of South America*.

FIG.—*Lindenia*, vi. t. 274.

O. LEPTURUM, Rchb. f.—A curious species imported by Mr. T. Christy. Sepals and petals cuneate, oblong, acute, sulphur-yellow, with a single brown spot on each; lip broadly cordate at the base, narrowing towards the small bifid apex, yellow spotted with light brown.—*Bolivia*.

O. LEUCOCHILUM, Bateman.—A desirable and beautiful species, of which there are many varieties, some richer in colour than others. It has oblong-ovate slightly furrowed pseudobulbs, linear-lanceolate acute leaves, and long drooping panicles of pleasing flowers, which have the oblong spreading nearly equal sepals and petals yellowish-green, closely barred and blotched with dark brown, and the broad kidney-shaped two-lobed lip pure white, with a blotch of purple-red on the contracted unguis, supported by two spreading white retuse lateral lobes. The scapes are sometimes as much as 10 feet long. It blooms at different times of the year, and lasts a long time in perfection. Best grown in a pot. Dr. Lindley, quoting Mr. Skinner, observes that the summer temperature

of the country where this *Oncid* grows wild is between 55° and 70°, and that in December, 1839, the thermometer in Guatemala at 6 a.m. in the open air for three days averaged 36°, and yet the plants continued to shoot their young stems.—*Mexico; Guatemala.*

FIG.—*Bateman, Orch. Mex. et Guat.*, t. 1; *Flore des Serres*, t. 522; *Parson, Mag. Bot.*, vii. p. 241, with tab.

SYN.—*Cyrtorchilum leucorchilum*.

O. LIETZEI, *Regel.*—This small flowering species is allied to *O. amictum*, and produces fusiform or cylindrical elongated pseudobulbs, 3 inches high, each carrying a single leaf, which is 6 inches long, thick, leathery, dull green, ovate-lanceolate acute; the scape, which rises from the base of the pseudobulbs, is about 18 inches high, and bears a many-flowered raceme; flowers 1½ inch across, pale brown; dorsal sepal concave, and like the petals, spathulate; lateral sepals united, having a bidentate apex; lip sub-hastate, bilobed at the apex. Flowers in October.—*Brazil.*

FIG.—*Gartenflora*, 1831, t. 1044.

O. LIMMINGHEI, *E. Morren.*—This pretty little species is one of the most singular in the whole genus, its habit being similar to that of a *Sophranitis*. The pseudobulbs are roundish, compressed, wrinkled, about ¾ inch long; the leaves are solitary sessile cordate ovate, 1 inch long, dark green speckled with dull crimson, arranged closely in a distichous manner on the surface, over which the stem is creeping; the flowers are solitary, or, according to the figure, two together, on a slender erect scape, the dorsal obovate sepal and two spreading oblong petals dull olive green with crossbars of brown; and the lip which has roundish auricles and a long isthmus supporting the broad roundish reniform front lobe, is yellow freely dotted on the front edge and on the side lobes with crimson. It flowers in June and July. It succeeds admirably in an intermediate temperature.—*Caracas.*

FIG.—*Flore des Serres*, t. 1827; *Belg. Hort.*, vi. t. 23; *Lindenia*, i. t. 20.

O. LONGIFOLIUM.—See *O. CEBOLLETA*.

O. LONGIPES, *Lindl.*—A pretty dwarf species of compact habit, growing about 6 inches high, and producing its short racemes of flowers in great abundance; the pseudobulbs are small oblong, tapered upwards on a creeping rhizome, diphyllous, the leaves linear-oblong apiculate, and the flowers borne in short racemes about as long as the foliage; the sepals and petals are spreading, of a dark brown, the dorsal one spathulate, the lateral ones united at the base; the petals are oblong, tipped with yellow, and the lip is large and of a bright golden yellow, with a broad blood-red ring surrounding the crest, which is downy, three-toothed at the apex. It blooms during the summer months, and will do well on a block or in a small basket. It very much resembles *O. Croesus*.—*Brazil.*

FIG.—*Bot. Mag.*, t. 5193; *Batm. Second Cent. Orch. Pl.*, t. 165; *Veitch's Man. Orch. Pl.*, viii. p. 55.

SYN.—*O. janciriense*.

O. LOXENSE, *Lindl.*—A rare and beautiful species, named and described by Lindley from dried flowers many years ago, and which has only recently been introduced to cultivation. The pseudobulbs are pyriform, a little compressed, 3 inches high; leaves ligulate, acute, thick and leathery. The long branching

spike bears numerous very beautiful and showy flowers, 3 inches across, thick and coriaceous in texture; sepals greenish-yellow, transversely barred



ONCIDIUM LOXENSE.

and blotched with chocolate-brown; petals deep chocolate-brown, with a narrow yellow marginal border and a yellow tip; lip large, sub-rotund with a hastate base, margins inflected; rich orange-yellow with lines of red spots at the base.—*Ecuador: Loja.*

FIG.—*Orchid Album*, x. t. 439; *Journ. of Hort.*, 1891, xxii. p. 517, f. 97; *Reichenbachia*, 2nd ser., ii. t. 54; *Veitch's Man. Orch. Pl.*, viii. p. 56.

O. LUCESCENS, *Rehb. f.*

—This fine novelty was introduced by us through Mr. Patin, and is nearly allied to *O. metallicum*. "It differs in the long, recurved, wavy dorsal sepal, in the trimembrate callus at the base of the lip, and

in the acute wings of the column; the dorsal sepal is brown with yellow recurved margin, much waved at the edge; its stalk is very short, with auriculæ which ascend on each side into a narrow margin; the lateral sepals have longer stalks, an oblong-acute greenish-brown blade, whose median nerve is rather green inside; petals very short, with two auricles to the short stalk, blunt, hastate, triangular, wavy, dark cinnamon, with crisp yellow limb; lip ligulate short, angulate at the base, dark greenish, anterior part fine purple; column greenish with brown spots, orange at the anterior angulate base; wings narrow, Indian purple, lunar ascending" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1887, i. p. 799).—*U. S. of Colombia.*

O. LUDENS, *Rehb. f.*—A species with the growth resembling *O. serratum*. Sepals rich brown merging into a mixture of yellowish-brown, the upper one with a narrow yellow border; petals yellow with cinnamon-brown marbling; lip pale yellowish ochre, coloured with brownish-mauve at the base of the callus.—*Native country not stated.*

O. LURIDUM, *Lindl.*—A peculiar bulbless epiphyte, with large thick solitary carinate leaves upwards of a foot long, dull green and spotted, and a tall slender scape bearing a panicle of large olive-green flowers, having brown confluent blotches which nearly cover the surface; the sepals are clawed undulated, the dorsal sepal roundish rhomboid, the petals larger, and the lip three-lobed with the central lobe broadly kidney-shaped and emarginate; the flowers are freely produced.—*Tropical America.*

FIG.—*Bot. Reg.*, t. 727; *Bot. Mag.*, t. 3603.

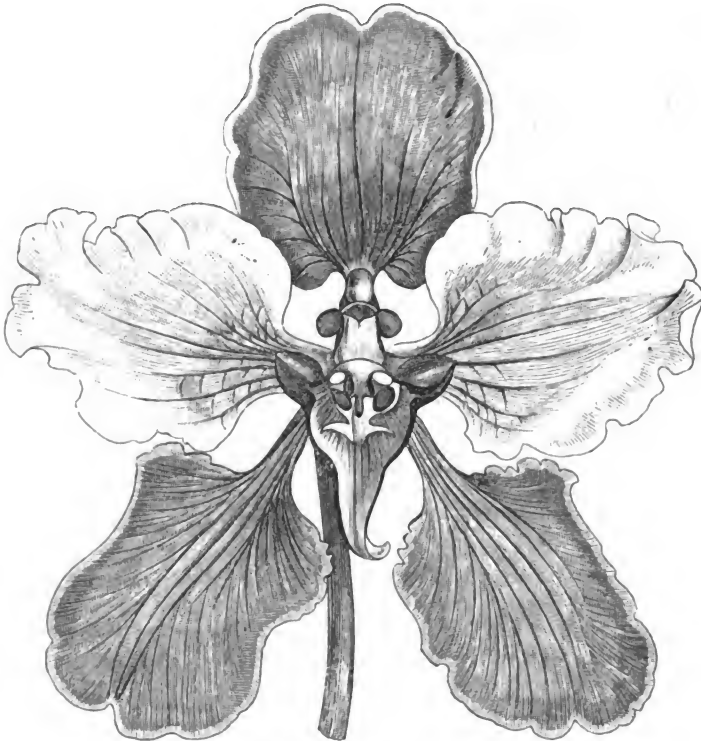
O. LURIDUM DODGSONI, *Williams*.—A splendid variety, named in compliment to the late R. B. Dodgson, Esq., of Blackburn. The leaves are very thick and fleshy, but broader and longer than in *O. luridum*; the flower spikes are 7 feet long, much branched, and bearing between three and four hundred flowers on each; their colour is orange and yellow, barred with dark brown. It should be potted in peat and sphagnum moss, and treated with a liberal supply of both heat and moisture.—*West Indies*.

O. LURIDUM GUTTATUM, *Lindl.*—A very rich and stately variety, producing panicles 3 to 4 feet long of gay flowers, which are yellow spotted all over with bright orange-red, the base of the lip being of a rosy-crimson. It blooms during the summer months, and continues in perfection a long time. This is best grown in a pot with peat.—*Jamaica*.

FIG.—*Bot. Reg.*, 1839, t. 16.

SYN.—*O. cuneatum*; *O. Boydii*; *Epidendrum guttatum*; *Cymbidium guttatum*.

O. LURIDUM INTERMEDIUM.—See *O. INTERMEDIUM*.



ONCIDIUM MACRANTHUM.

O. MACRANTHUM, *Lindl.*—This magnificent *Oncidium* is a great acquisition to the genus, being one of the handsomest species yet introduced. It is of free growth, with large ovoid pseudobulbs, lanceolate loriform acuminate dark green

leaves, and scapes several feet long, twining, branching, and many-flowered. The flowers are from 3 to 4 inches across, the clawed sepals and petals orbicular oblong broad thick and fleshy, the upper one of a golden olive-brown, the two lateral sepals deep orange-yellow, and the two petals of a clear bright yellow; the lip is hastate, much smaller than the petals, white, the side lobes dark purplish-brown. It is one of the finest species yet introduced, and blooms during spring and early summer, lasting long in full beauty. The cool house suits it best, and it should be potted in peat and sphagnum moss, with good drainage.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5743; *Warner, Sel. Orch. Pl.*, ii. t. 17; *Jennings, Orch.*, t. 42; *Floral Mag.*, t. 386; *Gard. Chron.*, 1869, p. 739, with fig.; *L'Orchidophile*, 1885, p. 189 (plate); *Lindenia*, iv. t. 152; *Reichenbachia*, ii. t. 64; *Vitch's Man. Orch. Pl.*, viii. p. 59; *Journ. of Hort.*, 1892, xxiv. p. 369, f. 64.

O. MACRANTHUM WILLIAMSIANUM, *Rehb. f.*—A most distinct and curious variety, having on each petal a large blotch of Indian purple, a style of marking which makes it a striking contrast to the original or typical form. It flowers during the summer months.—*New Grenada*.

O. MACROPETALUM.—See *O. MICROPOGON*.

O. MACULATUM, *Lindl.*—A neat and pleasing species, with ovate compressed angulate pseudobulbs, bearing two broadly ligulate leaves at the top, and having others springing from the base, out of whose axils the scape arises. The flowers are in racemes, and consist of obovate-lanceolate acuminate yellowish-green sepals and petals marked with purple blotches, and an oblong-ovate apiculate lip, which has a stout tooth on each side about the middle, and is of a pale sulphur-yellow, whitish at the base, where there are also four simple cuspidate keels. It is a plant of free and compact growth, producing its flowers during the winter and spring months.—*Mexico*.

FIG.—*Sertum. Orch.*, t. 25; *Bot. Reg.*, 1833, t. 44; *Bot. Mag.*, t. 3836 (*ecornutum*); *Id.*, t. 3880 (fl. larger); *Knoules & Westc. Floral Cub.*, t. 57; *Hook. First Cent. Orch. Pl.*, t. 79.

SYN.—*Cyrtorchilum maculatum*.

O. MANTINII, *Godefroy*.—It has been suggested that this is another natural hybrid, and that either *O. Marshallianum* and *O. Gardneri* or *O. sarcodes* are the probable parents. It was imported with a batch of *O. crispum* by Mr. Binot and flowered with Mr. Truffaut of Versailles. In growth it resembles *O. Gardneri*. The dorsal sepal small, incurved at the tip, chestnut-brown with a narrow yellow margin; petals much larger, measuring $1\frac{1}{2}$ inch in length and $1\frac{1}{4}$ inch in breadth, chestnut-brown with a bright yellow marginal border, having at the sides a few red spots; lip with a narrow isthmus, the middle lobe broadly reniform, four-lobed, 2 inches wide, clear yellow spotted with bright chestnut. Dedicated to M. Georges Mantin, of Bel Air, a distinguished French Orchid amateur.—*Brazil*.

FIG.—*L'Orchidophile*, 1888, p. 47 (plate).

O. MARSHALLIANUM, *Rehb. f.*—This superb species is certainly one of the most noble and brilliant of *Oncids* belonging to the group which has large-sized petals. The pseudobulbs are terete, ovoid-cylindrical, 2 to 4 inches long, with a pair of coriaceous oblong-lanceolate acute leaves 6 or 7 inches long and 2 inches

broad, of a bright green on the upper surface, paler beneath. The flowers are very numerous, in ample much-branched panicles, and are individually large—2½ inches across the spreading petals, and brilliantly coloured; the sepals are small, the dorsal one concave obovate, yellow banded with purple, the lateral ones oblong, connate at the base; the petals are an inch long, clawed, broadly fiddle-shaped, the margin undulated, the apex two-lobed, the colour deep golden yellow, with a series of large unequal irregular chestnut-brown blotches along the centre; and the lip is very large, contracted behind into an auricled claw spotted with orange-red, and having a tubercled beaked callus, the broad oblong front portion bright yellow and deeply bilobed. There have been some fine varieties of this species bloomed of late years, and we are glad to say there have been some good importations of it. As an exhibition plant this is one of the most telling that can be staged, the rich golden yellow of its blossoms contrasting well with the varied hues of other Orchids. It is best grown in the cool house, in a basket or on a block, as fully exposed to the light as possible. It blooms in April and May.—*Brazil*.



ONCIDIUM MARSHALLIANUM.
(From the *Journal of Horticulture*.)

FIG.—*Bot. Mag.*, t. 5725; *Floral Mag.*, 2nd ser., t. 285; *Gartenflora*, t. 979; *Orchid Album*, v. t. 240; *Lindenia*, v. t. 202; *Veitch's Man. Orch. Pl.*, viii. p. 61.

O. METALLICUM, *Rehb. f.*—A very distinct species, the flowers of which are of a rich chestnut-brown with a fine metallic hue, the borders of the short broad ovate upper sepal and the smaller petals blotched with rich yellow, and the lip pandurate with a triangular projection on each side at the base, contracted in the centre, and with a hastate oblong-obtuse front lobe.—*New Grenada*.

O. MICROPOGON, *Rehb. f.*—This species, according to Reichenbach, is similar in habit to *O. ciliatum*. It first flowered in Consul Schiller's collection in 1853. Dorsal sepal broadly lanceolate undulate, lateral sepals keeled, acute, connate at the base, yellow with a brown disk; petals cuneate elongate bright yellow; lip half the size of the sepals, three-lobed, lateral lobes obcordate spreading, middle lobe rounded fringed, clear yellow with cinnabar-red spots and streaks at the base.—*Brazil*.

FIG.—*Xenia Orch.*, i. t. 63, f. 2; *Bot. Mag.*, t. 6971.

SYN.—*O. macropetalum*, *Klotzsch* (not of Lindley); *O. dentatum*, *Klotzsch* (not of Lindley).

O. MONACHICUM, *Rchb. f.*—This is a very curious and distinct species allied to *O. metallicum*, and producing large branching spikes of flowers after the style of *O. serratum*. The dorsal sepal is reniform crisped overarching, dark brown with a narrow yellow crisp border, the lateral sepals are large, cuneate-



ONCIDIUM MONACHICUM.
(From the *Gardeners' Chronicle*.)

oblong, on long stalks; the roundish hastate incurved undulated petals cinnamon-coloured, blotched and edged with sulphur-yellow; and the ligulate lip is brown, and has an angulate base and a remarkable double callus. It flowers in March and April.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., xix. p. 368, f. 54.

O. NIGRATUM, *Lindl.*—A very pretty little species, with pyriform ancipitous shining green pseudobulbs, one or two ligulate acute leaves, and large branched panicles of small starry flowers, of which the sepals and petals are linear-lanceolate and much undulated, white barred with dark blackish-brown, and the lip, which is bluntly triangular in shape, is yellow with pale cinnamon spots. It blooms in March and April. The flowers are much like those of *Odontoglossum naerinum*, but smaller.—*Guiana*.

O. NUBIGENUM, *Lindl.*—A lovely small-growing but variable plant, sometimes regarded as a variety of *O. cucullatum*, and succeeding under the coolest treatment, growing as it does at an elevation of 11,000 feet above the sea level. It is somewhat more robust in all its parts than *Miltonia Phalaenopsis*, but

the flowers are in shape very like diminutive examples of that species. The pseudobulbs are small narrow-oblong, compressed, smooth, the leaves solitary linear-oblong acute, and the flowers in simple erect or nodding racemes on very slender scapes; the sepals and petals are small ovate acute, white or dull purple with green tips, and the lip is broader than long, the front lobe almost reniform, white with purple blotches, and three small calli at the base, but in the manner of its markings and the intensity of its colour it appears to be very variable.—*Ecuador*.

FIG.—*Bot. Mag.*, t. 5108.

O. OBLONGATUM, *Lindl.*—A handsome free-flowering species, of compact habit. It has short thick pseudobulbs, light green foliage about a foot in length, and very showy flowers of good size, and of a clear sulphur with bright light reddish-brown specks at the base of all the parts; the petals are wider than the sepals and blunter, and the lip has the middle lobe deeply fissured. It blossoms during the winter months, and continues a long time in perfection. The plant succeeds best in a pot.—*Mexico*.

FIG.—*Parton, Fl. Gard.*, ii. p. 9, f. 137.

SYN.—*O. xanthochlorum*.

O. OBRYZATUM, *Rehb. f.*—A showy species of neat compact habit, and growing freely in the cool house. The pseudobulbs are oblong-ovate compressed, monophyllous, with accessory basal leaves, oblong-ligulate in form; the flowers are produced in great abundance in branched panicles, and are bright yellow barred with brown, and yielding a delicious perfume; the branches of the panicle are short and flexuose, the sepals and petals are all reflexed, and the lip, which has a long claw-like isthmus and a broad reniform two-cleft anterior lobe, is clear yellow with an orange-red stain about the crest. There are many varieties of this plant.—*Peru*.

FIG.—*Gartenflora*, t. 925.

O. ORNITHORHYNCHUM, *Humboldt, Bonpland, et Kunth.*—A pretty free-flowering species, which has ovate-oblong compressed two-leaved pseudobulbs, ensiform acuminate leaves, and crowded gracefully drooping panicles, a foot long or more, of small but fragrant flowers of a clear rose, deeper in some forms than in others; the sepals and petals are wavy oblong, the latter broadest, and the lip is three-lobed, dilated rounded and emarginate at the point. There are two varieties of this, one having darker and larger flowers. It blooms during the autumn and winter months. This plant does best in a basket, in which the flowers are shown off to good advantage; it is a general favourite with Orchid growers, and useful for cutting. The fragrance resembles that of our native *Gymnadenia conopsea*.—*Mexico; Guatemala; Peru*.

FIG.—*Humb., Bonpl., et Kth., Nov. Gen.*, i. t. 80; *Bot. Mag.*, t. 3912; *Bot. Reg.*, 1840, t. 10; *Batem. Orch. Mex. et Guat.*, t. 4; *Knowles & Westc. Floral Cab.*, t. 136; *L'Orchidophile*, 1833, p. 102 (plate).

O. ORNITHORHYNCHUM ALBIFLORUM, *Rehb. f.*—This beautiful white variety of *O. ornithorhynchum*, which is a great acquisition for our Orchid collections, as white flowers are always valuable, first flowered in the collection of the late John Day, Esq., of Tottenham. From this gentleman we were fortunate

enough to secure a portion of the stock, which was duly distributed by us, and it is worthy of note, as a proof of the great estimation in which this variety is held by Orchid growers, that one of the plants sold by us realised at an auction sale the sum of fifty guineas. The flowers are pure white and deliciously scented, the calli only being yellow. It is a most chaste and beautiful variety, growing and flowering as freely as the type.—*Guatemala*.

FIG.—*Floral Mag.*, 2nd ser., t. 398; *L'Orchidophile*, 1885, p. 102 (plate).

O. PACHYPHYLLUM.—See *O. CAVENDISHIANUM*.

O. PALLIDUM.—See *O. HARRISONIANUM*.

O. PANTHERINUM.—See *O. HARRISONIANUM*.

O. PAPILIO, *Lindl.*—A very remarkable and beautiful species, with flowers similar in shape to a butterfly, whence it is named the Butterfly Orchid. It has roundish ovate compressed rugose dark purple pseudobulbs, bearing a single elliptical leathery one-nerved leaf, which is of a deep purple-brown, spotted and blotched over with green; the flower-scape, which springs from the base of the bulb, is 2 to 3 feet long, flexuose, jointed, the upper articulations compressed, ancipitous, and terminated by one or two large and very handsome flowers; the dorsal sepal and two petals are about 3 inches long, linear, erect, lurid green outside, purple within, the lateral ones oblong tapering wavy sub-falcate decurved, bright yellow, striped with transverse bands of orange-red; and the lip is shorter, roundish, $1\frac{1}{2}$ inch across, wavy at the edge, emarginate, distinctly clawed, yellow, mottled all over with brown or having a broad margin of bright cinnamon brown (*limbatum*). This species is best grown on a block or in a basket, and we have found it to succeed best in the East Indian house. The spikes of this plant should not be cut off but be allowed to remain, for as soon as one flower fades another appears.—*Trinidad, Caracas*.

FIG.—*Lodd. Bot. Cab.*, t. 1086; *Bot. Mag.*, t. 2795; *Id.*, t. 3733; *Bot. Reg.*, t. 910; *Jennings' Orchids*, t. 11; *Mauud, Botanist*, i. t. 10; *Parton, Mag. Bot.*, v. p. 175, with tab.; *Knowles & Westc. Floral Cab.*, t. 12; *Rehb. Fl. Exot.*, t. 62; *Hart. Parad.*, i. t. 9; *Flore des Serres*, tt. 920-22; *Hook. First Cent. Orch. Pl.*, t. 77; *Veitch's Man. Orch. Pl.*, viii. p. 67.

O. PAPILIO ECKHARDTII, *L. Linden.*—A superior variety of this old favourite, having larger flowers, and a very broad lip, of larger size than in the type; the three erect narrow perianth segments are $4\frac{1}{2}$ inches long, and the lip $2\frac{1}{4}$ inches across, the latter yellow with a broad orange-red border, and the lateral sepals cross-barred with a similar colour.—*Native country not stated*.

FIG.—*L'III. Hort.*, 3rd ser., 1883, xxx. t. 500.

O. PAPILIO MAJUS, *Rehb. f.*—A truly beautiful Orchid, which, like the other forms of the species, continues to bloom from the old flower stems for years—as soon as one flower fades, another appears in the same place; the form of the flowers, as already explained, is very peculiar, and the colour is rich dark brown, barred with yellow, with the lip very large, bright yellow in the centre, and edged with dark brown, varying in colour and size of flower. There are several varieties of *O. Papilio*, but that called *majus* is the best.—*Trinidad*.

FIG.—*Orchid Album*, vi. t. 279; *Lindenia*, iii. t. 138.

O. PELICANUM, *Martius*.—A very desirable species in which the pseudobulbs are of a dark green colour, and the leaves are elongate lanceolate and acute; it produces fine branching panicles of showy flowers, which have the sepals and petals yellow barred with brown, and the lip pale yellow.—*Mexico*.

FIG.—*Bot. Reg.*, 1847, t. 70.

SYN.—*O. cruentum*; *O. reflexum pelicanum*.

O. PENTASPILUM.—See *O. HARRISONIANUM*.

O. PHALAENOPSIS, *Linden et Rehb. f.*—A beautiful and distinct slender-habited plant, growing about 1 foot in height; the pseudobulbs are ovate oblong furrowed, about 2 inches long, and of a very dark green colour; the leaves in pairs, ligulate-oblong, deep green; and the scape very slender, bearing a raceme of five or six large flowers, $1\frac{1}{2}$ inch across, and 2 inches deep; the



ONCIDIUM PHALAENOPSIS.

(From the *Journal of Horticulture*.)

sepals are lanceolate, mottled all over with reddish-violet, except the edge which is creamy-white; the petals are of the same form and spreading, also creamy-white, but with cross-bars of a rich reddish-violet; and the lip is creamy-white, pandurate, the front dilated and bilobed, the narrowed middle part and the less dilated base spotted with violet-crimson; the base also bears a crest of three golden lamellae. It should be grown in the cool house.—*Ecuador*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 3; *Orchid Album*, ii. t. 96; *Lindenia*, iii. t. 123; *Journ. of Hort.*, 1891, xxii. p. 65, f. 12; *The Garden*, 1892, xli. p. 492, t. 859; *Veitch's Man. Orch. Pl.*, viii. p. 31.

SYN.—*O. cucullatum Phalaenopsis*.

O. PHMATOCHILUM, *Lindl.*—A pretty species, very distinct from all others in its flowers as well as in its growth. The pseudobulbs are broad-fusiform,

compressed, 4 to 5 inches long, the base invested by large distichous scales, and bearing at the tip a solitary dark green obovate-lanceolate leaf a foot long and 3 inches broad; the flowers are curious, and grow in a well-furnished paniced flexuous raceme, a foot or more in length; the sepals and petals are linear-subulate, flaccid, yellowish-green with a row of orange-red spots on the basal part; and the lip is shorter, three-lobed, the front trowel-shaped lobe white, the contracted claw-like portion thickened tuberculately, crested, yellow spotted with orange. This is a species which ought to be in every collection; it blooms during May and June, and continues in flower for two months at a time; it is best grown in a pot, with peat.—*Brazil*.

FIG.—*Bot. Mag.*, t. 5214; *Pescatorea*, t. 35; *Gard. Chron.*, 1848, p. 139, with fig.; *Parton, Fl. Gard.*, i. p. 88, with fig.; *Veitch's Man. Orch. Pl.*, viii. p. 69; *Orchid Album*, x. t. 470.

O. PINELLIANUM.—See *O. BATEMANIANUM*.

O. PRAETEXTUM, *Rchb. f.*—A desirable species belonging to the *O. curtum* section. In growth it resembles *O. crispum*. The flowers are sweetly scented, resembling hawthorn. "The sepals and the very broad blunt retuse petals are horse-chestnut colour, with many yellow blotches; the lip is dark yellow, with a broad brown margin around the broad anterior part, excepting the last circumference which is yellow."—*Brazil*; *Sao Paulo*.

FIG.—*Gartenflora*, 1887, t. 1238; *Bot. Mag.*, t. 6662.

O. PULCHELLUM, *Hooker*.—A beautiful dwarf compact plant belonging to the group with equitant foliage, the slender flower scape attaining a height of about 6 inches. The base of the leaves is compressed, striated, and the upper part of each is articulated on this basal portion, and is thick, succulent, triquetrous, distichous, and sharp-pointed, 3 to 5 inches long; the flowers grow in close racemes, and are roundish, the lip deeply four-lobed, with the sepals and petals much smaller, white with a tinge of pink around the yellow trifid crest; they are produced in abundance during the summer months, and remain for a long time in perfection. It thrives well on a block, with plenty of moisture at the roots.—*Jamaica*; *Demerara*.

FIG.—*Bot. Reg.*, t. 1787; *Bot. Mag.*, t. 2773; *Lodd. Bot. Cub.*, t. 1984.

O. PULVINATUM, *Lindl.*—A free-flowering species, compact in habit, the pseudobulbs and foliage growing about a foot high. The flower scapes, however, are not unfrequently 8 or 9 feet long, smooth, much branched, with flexuous divaricate branches; the flowers are very numerous and gay-looking, about an inch across, bright yellow with the base of the sepals and petals crimson, and the roundish three-lobed lip also yellow, but dotted with crimson around the margin; on the disk is a convex cushion of dense hairs. It blooms during the summer months, and lasts a long time in perfection. Pot culture and peat suit it best.—*Brazil*.

FIG.—*Bot. Reg.*, 1833, t. 42; *Veitch's Man. Orch. Pl.*, viii. p. 73.

O. PULVINATUM MAJUS, *Williams*.—A fine variety of the preceding, with the same habit of growth, but having blossoms much larger and also brighter in colour. We saw this very fine in August, 1884, in the collection of M. le Comte Adrien de Germiny, of Gouville, France.—*Brazil*.

O. RAMIFERUM.—See *O. HARRISONIANUM*.

O. RAMOSUM.—See *O. BATEMANIANUM*.

O. REFLEXUM, *Lindl.*—A pretty species, of dwarf habit and easy culture. Its ovate pseudobulbs are monophyllous, and its leaves narrow lanceolate and acute; the peduncles grow $1\frac{1}{2}$ foot high, and bear short remote flexuous branches, so that the numerous long spikes become covered with abundance of its comparatively large bright yellow flowers, of which the sepals and petals are regularly speckled with brown, and the lip has a few red specks at the base. Reichenbach describes the sepals and petals as dark purple and the lip white, and his uncoloured figure in the *Xenia* appears to agree with this description. Its flowers enliven the Orchid house as autumn is approaching, which should make it a universal favourite.—*Mexico*.

FIG.—*Maund, Botanist*, iii. t. 116; *Xenia Orch.*, i. t. 36.

O. REFLEXUM PELICANUM.—See *O. PELICANUM*.

O. RIGBYANUM.—See *O. SARCODES*.

O. ROBUSTISSIMUM, *Rehb. f.*—A species allied to *O. divaricatum* and *O. pulvinatum*. "The flowers are large, and the lip has the anterior part of the blade as broad as the lateral ones; sepals and petals yellow at the top, brown at the inferior part; the lip has the rounded serrate lateral laciniae, as well as the anterior emarginate one, with broad cinnamon-coloured stripes, transverse in the anterior, parallel or oblique in the lateral ones; bulb short, strong, elliptic, uncipitous" (*H. G. Reichenbach, in Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 352).—*Brazil*.

O. ROGERSII.—See *O. VARICOSUM ROGERSII*.

O. ROSEUM, *Loddiges.*—A pretty small-flowered species, regarded by Lindley as a variety of *O. carthaginense*. It is a bulbless plant with large solitary oblong leathery leaves, and a tall scape bearing short branches of small creamy white flowers spotted with bright crimson, and having a large blotch in front of the yellow disk. It blooms at different times of the year, and lasts six weeks in good condition. The plant is best grown in a pot with peat.—*Honduras*.

FIG.—*Sertum Orch.*, t. 27; *Bot. Mag.*, t. 3806 (*Huntianum*).

SYN.—*O. carthaginense sanguineum*; *O. sanguineum*; *O. Huntianum*; *O. Henchmanni*.

O. ROSEUM SUPERBUM, *Hort.*—A fine large variety of the preceding, which we saw in the collection of the late T. West, Esq., of Clapham Park. It is a magnificent plant, making panicles 5 feet long, covered with beautiful large rich crimson and white flowers.—*Honduras*.

O. RUPESTRE, *Lindl.*—A very handsome cool house species, of stout habit, with ovate compressed pale green smooth pseudobulbs, dark green ligulate leaves 1 foot long and 2 inches broad, and a stiff pyramidal panicle 2 feet high bearing numerous flowers, which are large and showy, of a brilliant golden-yellow, the sepals and petals with about three cinnamon blotches at the base of each, and the roundish bilobed lip with a stain of the same colour across its base.—*Peru*, on walls and rocks.

O. SANGUINEUM.—See *O. ROSEUM*.

O. SARCODES, *Lindl.*—A remarkably fine species, producing its showy and handsome flowers during March and April. The pseudobulbs are sub-cylindrical, from 3 to 4 inches long, terminated by two or three broad lanceolate leaves, and developing from the base a many-flowered panicle of large and handsome flowers, of which the upper sepal is obovate, yellow with dull brown cross-bars, the two lateral ones lance-shaped and dull-coloured, the petals cuneate spathulate, the basal two-thirds bright chestnut-brown with a few yellow cross lines, the apical portion yellow, and the broad repand undulated lip clear yellow except a few red spots in front of the crest. This showy plant has been scarce, but latterly there have been some large importations, which have yielded many varieties. It will do either in a basket or in a pot, with peat and moss.—*Brazil*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 23; *L'Ill. Hort.*, 3rd ser., t. 165; *Paxton, Mag. Bot.*, xvi. p. 257, with tab.; *Flore des Serres*, vi. p. 237, with fig.; *Lindonia*, v. t. 234; *Veitch's Man. Orch. Pl.*, viii. p. 76; *Orchid Album*, x. t. 477.

SYN.—*O. Rigbyanum*.

O. SERRATUM, *Lindl.*—A pretty species of very distinct aspect, on account of its long straggling semi-scandent panicles. The pseudobulbs are oval, 6 inches high or more, bearing large rigid lorate acute leaves 1 foot long, and the scape twining and branched, from 6 to 12 feet long, bearing many large flowers, which are bright chocolate-brown margined with yellow; the sepals, as are all the parts of the flower, are much crisped at the margins, the dorsal one reniform, and the lateral obovate, much lengthened out; the petals smaller, ovate acute, and connivent, the lip also small and hastate. It should be grown in rough fibrous peat, and placed in the cool house.—*Peru*.

FIG.—*Bot. Mag.*, t. 5632; *Batem, Second Cent. Orch. Pl.*, t. 194; *Gard. Chron.*, 1850, p. 279, with fig.

SYN.—*O. diadema*.

O. SESSILE, *Lindl.*—A pretty species of compact growth. It has two-leaved oblong compressed pseudobulbs, the leaves lorate papery, and the flower-scapes bearing panicles of large pale yellow flowers, spotted in the centre with pale cinnamon colour; these flowers are $1\frac{1}{2}$ inch across and nearly 2 inches deep, the sepals and petals oblong, and the lip auricled with the three-lobed crest smooth and hollowed out, and the broad front portion dilated and retuse. This species, which blooms during the spring months, and lasts in bloom four weeks, will do well in the *Cattleya* house.—*Caracas: Santa Martha*.



ONCIDIUM SPHACELATUM.

FIG.—*Paxton, Fl. Gard.*, i. t. 21; *Orchid Album*, v. t. 228.

O. SPECIOSUM.—See *MILTONIA CANDIDA*.

O. SPHACELATUM, *Lindl.*—A good free-growing free-blooming species, with elongate ovate ancipitous pseudobulbs, long ensiform leaves, and long branching panicles of flowers, which are bright yellow, the sepals and petals transversely barred with rich deep chestnut brown on the basal half, and the roundish



ONCIDIUM SARCODES.
(From the *Gardener's Chronicle*.)

bilobed lip having a bar of the same colour across its contracted base. The flowers are produced in April and May, and last for three or four weeks in beauty. There are two varieties—**MINUS**, *Lindl.*, with smaller flowers; and **MAJUS**, *Lindl.*, which is much to be preferred, the flowers being larger. It is best grown in a pot with peat or moss.—*Guatemala; Mexico.*

FIG.—*Bot. Reg.*, 1842, t. 30; *Veitch's Man. Orch. Pl.*, viii. p. 79.

O. SPILOPTERUM.—See *O. BATEMANIANUM*.

O. SPLENDIDUM, *A. Rich.*—This is a noble species, and once very rare, but owing to the large importations received of late years it is now within the reach of every Orchid grower. It is closely related to *O. tigrinum*, of which Dr. Hooker makes it a variety, and like that it is very showy and effective. It has short



ONCIDIUM SPLENDIDUM.

roundish or ovate somewhat compressed pseudobulbs, each of which supports a single erect fleshy oblong deep green leaf, and produces at the base a stout erect scape 2 feet long, terminating in a noble branched inflorescence of large and very handsome flowers; the oblong ligulate recurved sepals and petals are yellowish-green heavily barred with rich brown, and the lip is large and flat, the mid-lobe transversely oblong, with a broadish unguis, and of a uniform rich

clear yellow, the disk being a long white ridge, which is continued quite to the mid-lobe. The flowers are produced during the spring and early summer months. It should be grown in the *Cattleya* house, in a pot or basket.—*Guatemala; Mexico.*

FIG.—*Bot. Mag.*, t. 5878; *Flore des Serres*, t. 1825; *Puydt, Les Orch.*, t. 33; *Gard. Chron.*, 1871, p. 42, f. 4; *Journ. of Hort.*, 1888, xvi. p. 235, f. 28; *Reichenbachia*, ii. t. 78; *Orchid Album*, viii. t. 373; *Gard. Chron.*, 3rd ser., 1888, iii. p. 108, f. 18; *Revue Hort. Belge*, 1891, p. 108, t. 10; *L'Orchidophile*, 1891, p. 304; *Vitch's Man. Orch. Pl.* viii. p. 84.

SYN.—*O. tigrinum splendidum.*

O. SPRUCEI, *Lindl.*—This species belongs to the section *Teretifolia*, and is a near relation to *O. Cebolleta*, but its leaves, which are sometimes $2\frac{1}{2}$ feet long, are more swollen in the centre; the bright yellow flowers are produced in flexuose panicles in great profusion; the sepals and petals are obovate obtuse, yellow, blotched with red above, and the lip has the transverse middle lobe narrowly clawed, two-lobed, yellow, stained with red at the base. From its distinct habit it makes a good addition to a collection.—*Brazil.*

O. STELLIGERUM, *Rchb. f.*—This is an interesting and free-flowering species, allied to, but little resembling *O. hastatum*. The stellate flowers are produced in panicles, the oblong ligulate sepals and petals yellowish with many brown spots, the lip yellowish-white, with a darker yellow callus, the lateral lobes short obtuse-angled, the isthmus narrow, and the mid-lobe roundish cordate, shortly and abruptly cuspidate.—*Mexico.*

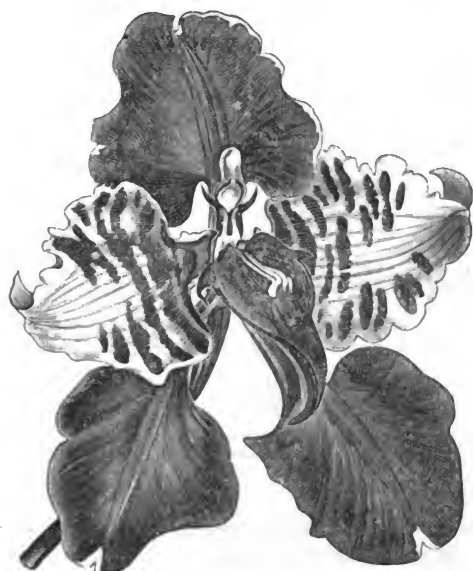
O. STELLIGERUM ERNESTI, *Williams.*—A very beautiful variety much superior to the type, named after Mr. Ernest Measures, son of R. J. Measures, Esq., of Camberwell, in whose collection it was first flowered in 1886, and was exhibited before the Royal Horticultural Society at South Kensington on July 27th of that year, when it was deservedly awarded a first-class certificate. Sepals and petals yellow spotted with dark-brown; the lip is broad, the front lobe being of a delicate rose-colour, while the anterior portion is pale yellow.—*Mexico.*

FIG.—*Orchid Album*, vi. t. 260.

O. STENOPETALUM.—See *O. BATEMANIANUM*.

O. SUAVEOLENS.—See *BRASSIA LANCEANA*.

O. SUPERBIENS, *Rchb. f.*—This handsome species belongs to the same section as *O. macranthum* and *O. serratum*. The pseudobulbs are elongate



ONCIDIUM SUPERBIENS.

ovate compressed, about 4 inches long; the leaves are about 1 foot long, linear-oblong acute, leathery, keeled; and the scape is 2 to 3 feet long, including a lax flexuous panicle of twenty to thirty flowers, which are $2\frac{1}{2}$ inches in diameter. The sepals are long-clawed, the upper trulliform much crisped, the apex reflexed, the lateral more ovate and less crisped, all chocolate-brown tipped with yellow; the petals are smaller, cordate, oblong, recurved, with a shorter broader claw, yellow in the apical half, barred with chocolate in the basal portion; the lip is much smaller, revolute, trulliform, of a blackish-purple, with the crest yellow.—*New Grenada; Venezuela.*

FIG.—*Bot. Mag.*, t. 5980; *Orchid Album*, vi. t. 276; *Journ. of Hort.*, 1891, xxii. p. 121, f. 24; *Veitch's Man. Orch. Pl.*, viii. p. 82.

O. TETRACOPIS, *Rehb. f.*—A pretty species belonging to the *Microchila* section. "Sepals chestnut-brown, superior one with a yellow border; the petals are bright yellow with some brown round blotches; the lip is yellow; the flowers are as large as those of a well-developed *O. superbiens*" (*Gardeners' Chronicle*, 1873, p. 915).—*New Grenada.*

O. TIGRINUM, *Llave et Lex.*—One of the most beautiful and free-blooming of the large-flowered yellow *Oncids*. The pseudobulbs are ovate compressed, blunt-edged, 3 inches long, bearing two or three lanceolate oblong leathery leaves, and from the base a panicle of numerous large showy flowers, which have the odour of violets. The sepals are linear-oblong, acute, wavy, revolute at the margins, the lateral ones curving upwards so that all three stand above the base of the lip; the petals are similar in form, and also curve upwards; both sepals and petals are yellowish-green, heavily marked with transverse bands of dark chestnut-brown; the lip is three-lobed, with the central part transversely oblong reniform, $1\frac{3}{4}$ inches broad, emarginate and apiculate, the smaller lateral lobes being almost semi-circular, and placed behind the distinct basal isthmus connecting the front with the hinder portion, the whole being of a bright clear yellow. It produces these branching panicles of flowers during the dull months of autumn and winter, which greatly enhances its value, and it lasts six weeks in bloom. There have been several importations during the last three years, which has made this fine Orchid more plentiful. It should be grown in the Mexican house.—*Mexico; Guatemala; Mechoacan.*

FIG.—*Sertum Orch.*, t. 48; *Bot. Reg.*, t. 1651; *L'Ill. Hort.*, t. 2; *Orchid Album*, iii. t. 137; *Paxton, Mag. Bot.*, xiv. p. 97, with tab.; *Reichenbachia*, ii. t. 88.

SYN.—*O. Barkeri; Odontoglossum tigrinum.*

O. TIGRINUM LUGENS, *Rehb. f.*—A variety with "sepals and petals of a reniform dark reddish-brown inside, the extreme tips being yellow; the dorsal keels on those organs are green."

O. TIGRINUM SPLENDIDUM.—See *O. SPLENDIDUM*.

O. TIGRINUM UNGUICULATUM, *Lindl.*—A pretty winter-blooming variety, in which the somewhat smaller flowers are produced on a long branching scape, 3 or 4 feet high, and last a long time in perfection; they are of a pale green colour, speckled with crimson, the lip clear yellow. It succeeds best potted in good fibrous peat.—*Mexico.*

SYN.—*O. ignotum.*

O. TRILINGUE, *Lindl.*—A very peculiar plant, still rare in collections, and very much resembling *O. serratum*, to which, indeed, it is nearly allied. The flowers grow in semi-scandent panicles, rather sparsely furnished; the lateral sepals are unguiculate, connate at the base, elongate lanceolate and undulated, the dorsal one roundish ovate, crisped, the claw auriculate, all of a rich reddish brown; the lip is dagger-shaped, brown, edged with light yellow, with a yellow crest. It should be potted in fibrous peat, and grown in the cool house.—*Peru*.

FIG.—*Parton, Fl. Gard.*, ii. t. 63; *Lem. Jard. Fl.*, t. 217.

O. TRIQUETRUM, *R. Br.*—A very pretty little species, introduced as far back as 1793. It has no pseudobulbs, but produces its leaves in tufts, which are 4 to 5 inches long; triquetrous spikes ten- to fifteen-flowered; individual flowers 1 inch across, "rose bordered with white, and deeply stained and spotted with crimson."—*Jamaica*.

FIG.—*Bot. Mag.*, t. 3393.

This species is as well as the O. undulatum, refer to O. undulatum

O. UNDULATUM, *Lindl.*—One of the *Macranthum* section and a strong growing evergreen species, with large ovate pseudobulbs, ribbed and wrinkled when old; the leaves are oblong-lanceolate, strongly ribbed and deep-green; scape 10 feet or more in length, much branched and many-flowered; the flowers measure from 2 to 3 inches across; sepals large and clawed, bronzy-brown in colour with a central band of pale green; petals larger than the sepals, clawed, oblong-cordate, emarginate, white, the lower half blotched with purple-mauve, spotted with purple on the upper margin and flushed with irregular feathery streaks of yellow; lip small triangular ligulate, recurved at the apex and of a uniform rich purple.—*New Grenada*.

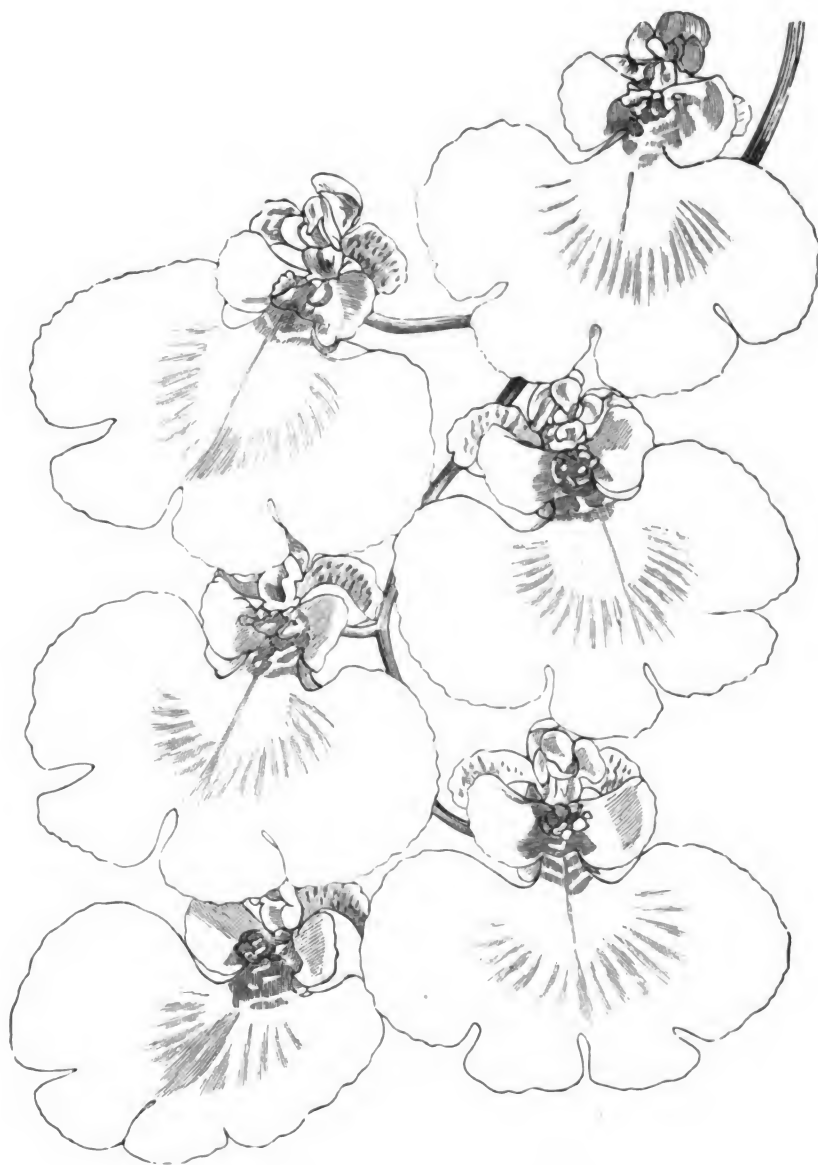
FIG.—*Humb., Bonpl., et Kunth*, i. t. 84 (*Cyrtorchilum undulatum*); *Orchid Album*, viii. t. 368. = *O. ...*

SYN.—*Cyrtorchilum undulatum*.

O. VARICOSUM, *Lindl.*—A very beautiful and well-marked species, having ovate oblong sub-tetragonal furrowed pseudobulbs 2 to 4 inches high, ligulate lanceolate bluntish keeled leaves, and stout glaucous panicles 2 to 3 feet long, literally covered with large showy flowers, of which the small oblong acute incurved sepals and reflexed obovate petals are pale dull green banded with dark brown, these being quite eclipsed by the large roundish or transversely reniform obsoletely four-lobed lip, which is flatly expanded and of a clear bright yellow. It flowers during the months of October and November.—*Brazil*.

FIG.—*Orchid Album*, iv. t. 192; *Lem. Jard. Fl.*, tt. 206-7; *Veitch's Man. Orch. Pl.*, viii. p. 89.

O. VARICOSUM ROGERSII, *Rchb. f.*—An exceedingly showy and beautiful free-flowering plant, which is now generally considered to be a variety of *O. varicosum*, to which it is evidently closely related. It has oblong ovate furrowed pseudobulbs, which bear two ligulate lanceolate leaves, and from their side a large densely-branched nodding panicle which sometimes bears as many as one hundred and seventy flowers, each measuring about 2½ inches across. The sepals and petals are comparatively small, the lip large, reniform, flat and spreading, deeply four-lobed in front, and rich golden-yellow in colour, with a few bars of



ONCIDIUM VARICOSUM ROGERSII.

(From the *Gardeners' Chronicle*.)

red-brown at the base. It blooms during winter, and should be grown in the Cattleya house, potted in peat and sphagnum moss.—*Brazil*.

FIG.—*Warner*, *Sel. Orch. Pl.*, ii. t. 31; *Jennings*, *Orch.*, t. 29; *Floral Mag.*, t. 477; *Florist and Pomol.*, 1870, p. 25, t. 304; *Gard. Chron.*, 1870, p. 277, f. 48; *Flore des Serres*, xviii. p. 150, with fig.; *Belg. Hort.*, 1878, tt. 6, 7; *L'Orchidophile*, 1892, p. 249 (plate); *Veitch's Man. Orch. Pl.*, viii. p. 89.

SYN.—*O. Rogersii*.

O. VARIEGATUM, *Swartz*.—A pretty dwarf-growing species with fleshy equitant acuminate serrulate leaves 3 or 4 inches long, and of a dark green colour, the branching upright panicles 6 inches to 1½ foot high, bearing many blossoms of a rosy-pink colour, richly stained with cinnamon-red on the petals and at the base of the sepals and lip, these blossoms continuing in beauty for several weeks. The petals are largish obovate clawed, the apex emarginate and cuspidate; and the lip bears two small acute lateral lobes, and has a broad two-parted middle lobe with a denticulate claw, and a crest consisting of two sets of tubercles. It is best grown on a block with plenty of moisture at the roots.—*West Indies*.

FIG.—*Parson*, *Pl. Gard.*, i. t. 33; *Lem. Jard. Pl.*, t. 99.

O. VERRUCOSUM.—See *BRASSIA VERRUCOSA*.

O. WARNERI, *Lindl.*—A very pleasing and distinct dwarf-growing species, with caespitose ovate ancipitous sub-angulate pseudobulbs, which are two-leaved, the leaves linear-lanceolate and recurved. The flowers grow in short racemes of five to eight together, the sepals being oval, spreading, the petals somewhat narrower and ascendent, and the lip three-lobed flat, with the middle lobe cuneate and deeply parted into two roundish lobes. There are two varieties, in both of which the lip is of a bright yellow; but in one **SORDIDUM** the sepals and petals are dull yellow streaked with purple, and in the other **PURPURATUM** the sepals and petals are white streaked with bright purple. This latter form is the most desirable for cultivation. This species blooms during the autumn months.—*Mexico*.

FIG.—*Bot. Reg.*, 1847, t. 20.

SYN.—*Odontoglossum Warneri purpuratum*.

O. WARSCEWICZII, *Rehb. f.*—A rare and interesting ornamental species, remarkable for the great spathaceous bracts of its flower scape. The pseudobulbs are ovate, compressed, two-leaved, the leaves narrow oblanceolate, and the flowers in racemes 1 foot long, from twelve to seventeen being borne on the raceme; the sepals and petals are oblong-lanceolate obtuse, the petals broader and blunter, while the lip is broadly cuneate and auricled at the base, with a long narrow isthmus, which is thickened and blunt-angled on each side, and is continued into a broad reniform bilobed apex; the flowers are golden-yellow, the borders of the isthmus tinted with brown; there is a crest of three raised lines on the disk. The *O. bifrons* of Dr. Lindley is regarded as a starved specimen of this plant by Reichenbach, who states that it perishes as soon as it descends into the warm zone.—*Costa Rica*, at an elevation of 8,000 to 10,000 feet, growing on oaks.

FIG.—*Gard. Chron.*, 1857, p. 84, with fig. (starved specimen, fide *Rehb.*); *Linden*, ii. t. 88.

SYN.—*O. bifrons*.

O. WELTONI.—See *MILTONIA WARSCEWICZII WELTONI*.

O. WENTWORTHIANUM, *Bateman*.—An old and well-known species first discovered by Mr. G. Ure-Skinner in 1839, and by him sent to Mr. Bateman, in whose collection it flowered in 1840. Spikes large, branched, many-flowered; flowers 1 inch in diameter. "Flowers yellow, with deep brown bars on the sepals and petals, and a cinnamon-coloured stain over the base of the lip" (Lindley, in *Paxton's Flower Garden*).—*Guatemala*.

FIG.—*Paxton's Flower Garden*, ii. p. 23, f. 123.

O. WHEATLEYANUM, *Gower*.—A very beautiful and distinct *Oncidium*, which was flowered by F. Wheatley, Esq., Ringmore, Teignmouth. It is described in *The Garden*, 1893, xliv. p. 227, as follows:—"The flowers thickly set upon the spike, are each nearly 2 inches across; the spike carried upwards of thirty flowers, making a most imposing display; the sepals and petals are spreading, nearly equal, of a rich bright brownish-crimson bordered with yellow; lip somewhat uniform, rich golden-yellow, with a marginal border of deep chestnut-brown or crimson, the whole surface regularly and distinctly corrugated; at the base are two golden-yellow auricles, and the claw and for some distance upon the blade is a large stain of deep maroon-crimson of a velvety appearance."—*Native country not stated*.

O. XANTHOCHLORUM.—See *O. OBLONGATUM*.

O. XANTHODON, *Rehb. f.*—A very striking plant of the *O. serratum* section, and one which although the flowers are not so large as in that species, yet makes a good display from their being very freely produced. In habit of growth it closely resembles *O. serratum*. The pseudobulbs are 5 inches long, narrow ovoid, much compressed; the leaves narrow linear-obovate, 2 feet long, one at the apex and several equitantly sheathing the base of the bulb; the scape is 6 to 8 feet long, twining, bearing a large flexuously branched panicle of numerous flowers, which have the clawed obovate-rotundate undulate-crisped crenate sepals and petals of a rich dark brown, bordered with bright yellow, the smaller narrower obovate recurved lip being of the same colours with the basal portion yellow, irregularly quadrate, and bearing a crest of several tubercular calli.—*Ecuador*.

FIG.—*Bot. Mag.*, t. 5756.

O. ZEBRINUM, *Rehb. f.*—An old and very beautiful species, first flowered in this country by Mr. Bull, of Chelsea, in 1872. This Orchid may be said to be a true scandent species, as it produces its bulbs 4 to 6 inches apart on a creeping rhizome; it produces long branched panicles several feet in length; flowers 1 to 1½ inch in diameter; segments white, blotched transversely with reddish-purple in a zebra-like manner; lip white, spotted with reddish-brown.—*Venezuela*.

FIG.—*Gard. Chron.*, 1872, p. 1355, f. 304.

SYN.—*Odontoglossum zebrium*.

ORCHIS, *Linnaeus*.

(Tribe Ophreac, subtribe Serapideac.)

This is the genus which has given its name to the whole order; they are terrestrial, tuberous-rooted, deciduous plants, having radical sheathing leaves, and are distinguished by their sepals and petals being nearly

equal, the dorsal sepal and the petals ascending, connivent, or the lateral sepals spreading, the lip spurred and decurved. These plants are for the most part natives of Europe, some few species are found in the cooler parts of Asia, and a few are also found in North America. From the tubers of this genus a nutritive starch is obtained which comes into the commercial world by the name of Salep.

Culture.—Very little attention has been given hitherto to the cultivation of the various plants belonging to this genus. According to some old authorities, the best time for their removal is during the growing season, but with this we do not agree, for our practice has been to remove the tubers in the autumn, and just before the end of the year we have always found to be the best time, and they should be at once planted in a border or bed previously prepared for them, similar in condition to that from which they were taken; thus for those found growing in calcareous soil, a similar mixture should be given, but for those which grow naturally in open meadows, or in woods, a good mixture of peat, loam, and leaf mould with some sand is best, whilst for those which affect more boggy places, a congenial place must be found, and with some little attention to the requirements of the different species, the supposed difficulties in their management will quickly disappear.

O. FOLIOSA, *Solander*.—This, though rarely seen, makes a very fine exhibition plant. It has been exhibited in splendid condition by the late A. Turner, Esq., Leicester, and has frequently been shown in our own collections, where it has always attracted universal admiration. It grows about $1\frac{1}{2}$ foot high, has oblong lanceolate acuminate leaves, and in May and June produces its dense oblong spikes of beautiful purple spotted flowers, which continue in perfection for some time. It should be in every collection.—*Madeira*.

FIG.—*Bot. Mag.*, t. 5074; *Batem. Second Cent. Orch. Pl.*, t. 170; *Bot. Reg.*, t. 1701.



ORCHIS FOLIOSA.

O. LONGICORNIS, *Smith*.—A really beautiful species. It blooms generally from about December to the end of May; and as these plants are so easily grown, if not much disturbed, or kept too warm, it is surprising that they are so neglected by the majority of Orchid growers. It grows from 12 to 20 inches high, and has oblong-linear obtuse leaves, and densely set flower spikes; the flowers have the side lobes of the lip roundish and dark purple, and the middle lobe white spotted with crimson, the two parts forming a striking contrast; they have a very long spur.—*South of Europe; Barbary*.

FIG.—*Bot. Mag.*, t. 1944; *Bot. Reg.*, t. 202; *Floris*, 1853, t. 74.

O. MACULATA SUPERBA, *Hort.*—This is a very fine variety of our British species *O. maculata*. There are many of the native species which are very interesting, though they are difficult to manage, or get the credit of being so, because no one perseveres with them and endeavours to understand their peculiar requirements. The present plant has bloomed very finely with us upon several occasions, and is well worth general cultivation. It grows about 18 inches high, the leaves dark green, beautifully spotted with purple, and the flower spikes about 1 foot long, densely set with the beautiful flowers, which are a rich mauve, spotted and blotched with purple, and which last in perfection a long time. It flowers in May and June, and is a good match plant for *O. foliosa*.—*Europe*.

ORNITHOCEPHALUS, *Hooker*.

(*Tribe Vandeae, subtribe Notylideae*.)

A curious small genus of *Epiphytal* Orchids, which for the most part are diminutive in stature, and do not produce showy flowers, the largest flowered species being included here; some score or more kinds are known, all being natives of the Western Hemisphere, being found mostly in Mexico, Brazil, and other parts of South America. The genus was established by Hooker upon *O. gladiatus*, a small species which we are



ORNITHOCEPHALUS GRANDIFLORUS.

told grows upon the dead branches of trees in the island of Trinidad, and which was introduced some seventy years ago; it obtained its name of the "Bird's Head Orchid" from the long tail-like gland attached to the pollen masses, which give it the appearance of a long-billed bird's head in miniature.

Culture.—The plant here quoted thrives best in the heat of the *Cattleya* house, upon a block of wood with a little sphagnum moss, or it may be grown in a small earthenware basket or pan suspended from the roof; these must be well drained and the plants kept nicely moist at all seasons of the year. It is a plant which takes a very long time to develop its spike of bloom.

O. GRANDIFLORUS, *Lind.*.—Although several species of *Ornithocephalus* are known, this is the only one in cultivation at the present day. It is a dwarf-growing and compact evergreen plant, having bright green oblong-acute leaves, from 3 to 5 inches long; the scapes are produced from the axils of the leaves, from 6 to 8 inches long, arching, bearing a dense many-flowered raceme of flowers measuring about $\frac{3}{4}$ inch across; sepals and petals pure white, blotched with bright emerald green at the base; lip somewhat rounded, saccate, keeled beneath, clawed, the front lobe crisped, white in front, green behind.—*Brazil, Organ Mountains.*

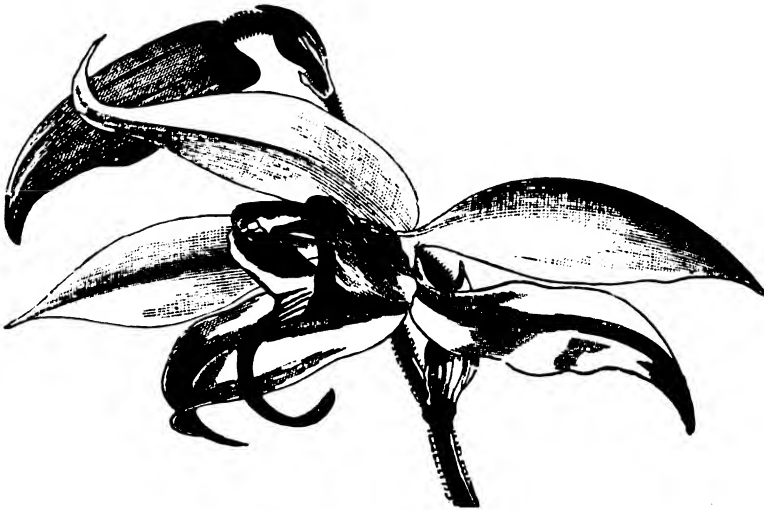
FIG.—*Belg. Hort.*, 1884, p. 89; *Veitch's Man. Orch. Pl.*, viii. p. 134; *Orchid Album*, x. t. 472.

PACHYNE.—See *PHAJUS GRANDIFOLIUS*.

PACHYSTOMA, *Blume.*

(Tribe *Epilendreae*, *subtribe* *Erieae*.)

A small genus of Orchids allied to *Ipsen*, and producing from the rhizomes one or two-leaved pseudobulbs, often developed later on, and having simple leafless scapes bearing the flowers in short racemes.



PACHYSTOMA THOMSONIANUM.

There are about ten species found in West Tropical Africa and the Malay Archipelago. *Ipsen* is included in the genus by some authorities.

Culture.—This plant is best grown in a pot in a compost of fibrous peat and sphagnum moss, and with good drainage. It should be grown in the East Indian house as near the light as possible.

P. THOMSONIANUM, *Rchb. f.*—A very pretty dwarf-growing plant, with small depressed orbicular tunicate pseudobulbs, solitary erect elliptic lanceolate plicate leaves, and erect slender scapes from the base of the bulbs bearing from one to three flowers, each being from 3 to 3½ inches across and spreading; the dorsal sepal is erect oblong-lanceolate acuminate, larger than the rest, the lateral ones being decurved, the petals are also lanceolate spreading, all these being pure white; the lip is 1 inch long, trifid, with erect conchoid sub-quadrate lateral lobes, the central one lanceolate triangular, the apex tapered and recurved, white marked with broad reddish-purple streaks. It flowers in October and November, and is very rare.—*West Tropical Africa*.

FIG.—*Bot. Mag.*, t. 6471; *Xenia Orch.*, iii. t. 213; *Gard. Chron.*, N.S., xii. p. 624, f. 102—3; *Id.*, xviii. p. 501, f. 87; *Orchid Album*, v. t. 220; *Veitch's Man. Orch. Pl.*, vi. p. 4.

PALUMBINA, *Rchb. f.*

(Tribe Vandeeae, subtribe Oncidieae.)

The only species referred here was at first very doubtfully stationed in *Oncidium* by Lindley, and next separated from *Oncidium* under the name of *Palumbina* by Reichenbach. Bentham puts it back into *Oncidium*. It appears to differ in its lateral sepals being connate into one, forming a short concave emarginate organ, in its peculiar "tabula stigmatica," and, according to Lindley, in its four pollen-masses. It is a Guatemalan plant.

Culture.—A rare and interesting species, which thrives best under rather cool treatment. It will do in a pot, with peat, moss, and good drainage, but it does not require much water at the roots at any time. It should be grown in the cool house.

P. CANDIDA, *Rchb. f.*—This interesting plant is very distinct in habit and appearance. The pseudobulbs are narrow compressed ligulate, bearing each a linear or cuneate-ligulate pale green leaf; the scapes are slender, dark purplish, bearing a raceme of several flat waxy white flowers, which continue in perfection a long time; of these the sepals are oblong sub-acute, the lateral ones connate to the tip, the petals larger, also oblong, and lip elongate ovate.—*Guatemala*.

FIG.—*Bot. Mag.*, t. 5546; *Gard. Chron.*, 1865, p. 793, with fig.; *Id.*, N.S., xx. p. 233, f. 35; *Veitch's Man. Orch. Pl.*, viii. p. 19; *Orchid Album*, xi. t. 490.

SYN.—*Oncidium candidum*.

PAPHINIA, *Lindley*.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

Of this pretty genus there are only a few species known, but they are all well worth growing, being compact in habit, and having short pseudobulbs, plicate leaves from 6 inches to 1 foot in length, and



PACHYSTOMA THOMSONIANUM.
(From Messrs. J. Vitch & Sons' Catalogue.)

pendulous scapes bearing flowers of rather a grotesque appearance from the peculiar distribution of their colours. They were originally assigned to *Maxillaria*, but Bentham places them under *Lycaste*. They are found wild in Demerara, Trinidad, and New Grenada.

Culture.—The species of *Paphinia* succeed best in the East Indian house, suspended from the roof in pots or pans of good fibrous peat and sphagnum moss, with the addition of a few lumps of charcoal, and with plenty of drainage. They enjoy a liberal supply of water at the roots during the growing season. Propagation is effected by separating the bulbs.

P. CRISTATA, *Lindl.*—A pretty dwarf free-flowering species, which grows about 8 inches high, and has small shining oblong-ovate compressed slightly furrowed pseudobulbs, with two or more oblong-lanceolate plicate leaves from their apex, and from the base a pendent scape, usually bearing about three flowers which are some 3 inches across; the sepals and petals are all lanceolate spreading, the fleshy sepals and the smaller petals are white almost covered with longitudinal streaks, and near the base with transverse bars of dark chocolate-brown; the lip is much smaller, thick, and fleshy, somewhat ovate in outline, shortly clawed, with oblong acinaciform lateral lobes, and a central rhomboidal one, almost wholly of a rich chocolate-brown, but with a terminal tuft or pencil of club-shaped downy white fimbriae, the disk bidentate, and the column yellowish green banded with chocolate. There are two varieties, one of which produces much darker flowers than the other. It blooms at different times of the year, and will remain in beauty for about a fortnight.—*Demerara, Trinidad, New Grenada.*



PAPHINIA CRISTATA.

FIG.—*Bot. Reg.*, t. 1811; *Bot. Mag.*, t. 4836; *Batem. Second Cent. Orch. Pl.*, t. 117; *Flore des Serres*, t. 335; *Maunder, Botanist*, ii. t. 75; *Orchid Album*, i. t. 34.

SYN.—*Maxillaria cristata*.

P. CRISTATA MODIGLIANIANA, *Rchb. f.*—A lovely variety, having white flowers, the tip of the column being lemon-yellow. Dedicated to the Chevalier Modigliani, of Florence.—*Brazil*.

FIG.—*Lindenia*, iii. t. 117.

P. CRISTATA RANDI, *Linden et Rodigas*.—This variety differs from the type in the narrower more elongated petals, but especially in the coloration, which is of a light reddish-brown; the sepals have a white marginal border, and at the base some transverse and longitudinal white marks, while the petals have broad white marginal borders, and some transverse bands at the base. It is dedicated to Mr. E. S. Rand, author of *Orchid Culture*.

FIG.—*Lindenia*, i. t. 80.

P. GRANDIS, *Rchb. f.*—This species produces handsome flowers about twice the size of those of *P. cristata*. It has small angular ovate clustered pseudobulbs, short elliptic lanceolate acuminate plaited leaves, and pendent three-flowered scapes, bearing semi-expanded flowers 7 inches across; the sepals and petals are broad ovate-lanceolate, creamy white in the lower half, transversely spotted and barred with chocolate purple, the apical portion being entirely covered with this purple colour, and the petals having the markings in narrower and finer bands set more concentrically; the lip is somewhat obovate in outline, with a blackish purple claw widening into an oblong-obovate cream-coloured disk, from which a pair of bluntly linear incurved chocolate brown side lobes proceed; it then becomes constricted, the front lobe furnished with two laterally spreading acute recurved blackish purple falcate teeth, and terminating in a roundish knob, covered with a bunch of shaggy cream-coloured glandular hairs; the column is green spotted with purple and tipped with bright yellow. A fine flower of this species was communicated by W. Williams, Esq., Sugnell Hall, Eccleshall, Staffordshire. It flowers in October and November.—*Brazil*.

FIG.—*Orchid Album*, iv. t. 145; *Xenia Orch.*, iii. t. 255; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 561, f. 93.

P. LINDENIANA, *Rchb. f.*—This species is allied to *P. cristata*, which it much resembles in growth; the flowers have the segments broader than those of that species, and they have the peculiarity of carrying the lip uppermost; the sepals are light reddish-brown with broad white marginal borders; petals same colour, with narrow sharply defined white marginal borders. It was discovered by Mr. Bungeroth near the sources of the Orinoco.—*Venezuela*.

FIG.—*Lindenia*, iii. t. 106.

P. RUGOSA, *Rchb. f.*—A pretty little free-flowering species. The pseudobulbs are very small, nearly terete, furrowed, the leaves cuneate below and much acuminate, and the scapes pendulous bearing two flowers as large as those of *P. cristata*; the sepals and petals are white or creamy yellow, distinctly spotted with dull purple; the lip reddish-purple with a white fringe. It flowers during the summer months. This variety Reichenbach suggested should be called **SANDERIANA**, and the other New Grenadan variety, which

has the sepals and petals yellowish with few brown spots, and the lip white spotted with purple, should be regarded as the type of the species.—*New Grenada*.

FIG.—*Reichenbachia*, 2nd ser., i. t. 11.

SYN.—*P. Sanderiana*.

P. SANDERIANA.—See *PAPHINIA RUGOSA*.

P. TIGRINA.—See *HOULLETIA TIGRINA*.

PERISTERIA, Hooker.

(Tribe Vandeeae, subtribe Stanhopieae.)

A genus of remarkable species, one of which, *P. elata*, the Dove plant, is a noble object, and one which ought to be in every collection. These plants produce their flower scapes from the side of their large pseudobulbs, near the base, and have broad plicately venose leaves contracted into a petiole below. The flowers are showy, with thick broad sepals connivent into a globular form, a three-lobed lip with the lateral lobes erect and the middle lobe concave and inflexed, and a column which is dilated and bears two large fleshy wings. There are three or four species found in the Andes of Colombia, and Central America.

Culture.—These fine and stately plants will succeed in either the East Indian or the *Cattleya* house, and should be potted in loam and leaf mould; a good quantity of water is necessary during their period of growth, after which they must have a good season of rest, and be kept nearly dry at the roots, for if allowed to get wet during their resting season they are apt to rot. They are propagated by dividing the plants.

P. ASPERSA, Rolfe.—Another of the many discoveries of Mr. Bungeroth. It has oblong-ovoid pseudobulbs, which measure about $4\frac{1}{2}$ inches in height, and more than 7 inches in diameter; scape short and dense, produced from the base of the bulbs, semi-pendent, carrying ten or twelve flowers of a clear yellowish-brown, densely freckled with reddish-brown; anterior lobe of the lip darker bordered with maroon.—*Venezuela*.

FIG.—*Lindenian*, vi. t. 267.

P. BARKERI.—See *ACINETA BARKERI*.

P. CERINA, Lindl.—A fine species, having strong oblong-ovate dark green pseudobulbs 3 inches high, supporting a pair of large coriaceous plicate leaves of the same colour; the flower scape is short, pendulous, bearing a dense raceme of nine or ten unspotted yellow flowers, which have the smell of bruised juniper leaves, but more aromatic. It blooms in June or July.—*Central America*.

FIG.—*Bot. Reg.*, t. 1953.

P. ELATA, *Hook.*—A noble free-growing plant, with large broadly ovate pseudobulbs, surmounted by three to five light green plaited lance-shaped leaves 3 to 4 feet high. The flower scapes are erect, 3 to 5 feet in height, bearing a long raceme of white waxy almost globose flowers; the central parts of each flower present a very striking resemblance to the figure of a dove, whence it is called in the vernacular, *El Spirito Santo*. This plant usually flowers in July, August, and September, and continues blooming for two months when the growths are strong.—*Panama*.



PERISTERIA ELATA.

FIG.—*Bot. Mag.*, t. 3116; *Jennings, Orch.*, t. 44; *Hook. First Cent. Orch. Pl.*, t. 64; *Orchid Album*, vii. t. 327; *Veitch's Man. Orch. Pl.*, ix. p. 128.

P. GUTTATA, *Knowles et Westc.*—A curious species which produces short pendent scapes bearing dense racemes of dull salmon-red flowers, copiously marked on both surfaces with reddish-purple or maroon spots, and which have an agreeable aromatic resinous odour. The pendulous flower spikes hang over the edge of the pot; it blooms in September, lasting two or three weeks in perfection.—*Demerara*.

FIG.—*Knowles & Westc., Floral Cab.*, t. 70.

P. HUMBOLDTI, *Lindl.*—See ACINETA HUMBOLDTI.

P. LAETA, *Rchb. f.*—A species of unknown origin, which flowered in the Hamburg Botanic Gardens in 1887. It is allied to *P. cerina*. Pseudobulbs narrow, light green; leaves thin, long linear; flowers bright yellow; the sepals and petals have numerous dark purple spots; the lip is more pallid and the spots are much smaller.—*Native country not stated*.

P. LINDENI, *Rolfe.*—A very handsome and singular species, with obovoid-elongate pseudobulbs, and large deep green plicate leaves; raceme seven- to twelve-flowered, produced from the base of the pseudobulbs, pendulous; sepals and petals elliptic-oblong, obtuse, clear green flushed with deep purple except at the tips, and spotted with blackish-purple; lip margined and striped with the same colour on a light ground. Flowers in February.—*Native country not stated*.

FIG.—*Lindenia*, vii. t. 328; *Journ. of Hort.*, 1892, xxv. p. 301, f. 41.

P. PENDULA, *Hook.*—A handsome species, with oblong-ovate furrowed pseudobulbs, bearing three or four lanceolate nervose leaves, and a short pendulous scape from the base of the bulb, bearing a close-set raceme of about five globose flowers, which are of a bluish-tinted yellowish colour thickly sprinkled with purple dots, the lip dingy white spotted with purple, its disk bearing a thick elevated crest, and the anterior lobe deeply grooved with a recurved apex.—*Demerara*.

FIG.—*Bot. Mag.*, t. 3479; *Hook. First Cent. Orch. Pl.*, t. 65.

P. ROSSIANA, *Rchb. f.*—A species allied to *P. pendula*, which was flowered by H. J. Ross, Esq., of Castagnole, Italy, to whom it is dedicated. Reichenbach

described it in the *Gardeners' Chronicle*, 1889, v. p. 9, as follows:—"The bulb is as long as and shaped like a good hen's egg, most obscurely two-edged, shining, green; the leaves appear not to be distinct from those of *P. pendula*; the raceme had five flowers equal to those of the just-named species; they have the same sepals and petals, only the reddish spots on light ochre ground are confined to their anterior parts; the lateral wings of the lip have callous nearly adnate blades inside; these are connected by a very thick strong transverse bar in *P. pendula*, while the corresponding bar in *P. Rossiana* is quite thin, much lower and with a median apiculus; the moveable mid-blade is pandurate, curved at the blunt apex, and it has two strong crescent-shaped keels."—*Native country not stated.*

P. SELLIGERA, *Rehb. f.*—Like *P. laeta*, this is nearly allied to *P. pendula*, and described in the *Gardeners' Chronicle*, 1887, ii. p. 273, as follows:—"The flowers have nearly the same colour as *P. pendula*, the epichile being perhaps more yellow; it may be distinguished at once by its armless column, on which account it comes near *P. cerina*; it has, however, a saddle-like callus, with deep argute margins covering the whole disk; it is therefore quite distinct."—*Guiana: Demerara.*

PESCATOREA, *Reichenbach fil.*

(Tribe Vandeeae, subtribe Cyrtopodieae.)

This genus consists of epiphytal plants scarcely forming pseudobulbs, but having bold distichous evergreen leaves, and one-flowered scapes issuing from amongst them, bearing large flowers, which have a clawed lip, with an ovate acute lamina, a deeply fimbriated crest, and a very broad column. The few species are from the Andes of South America.

Culture.—The *Pescatoreas* are easily grown if they get the treatment required, but they are often killed by not having sufficient heat and moisture. We find they do best in the warmest end of the East Indian house, with plenty of water all the year round, for they seem never to require any rest. The attention that may be given them will be well repaid by a profusion of their elegant, curious, and delicately scented flowers. The plants will do well either on blocks or rafts or in pots; if on blocks, live sphagnum should be packed about their roots; if in pots, they should have a compost of peat and moss, with good drainage.

P. BACKHOUSIANA, *Rehb. f.*—A very distinct and beautiful species in the way of *P. Klabochorum*. The sepals and petals are creamy white heavily tipped with bright purplish-violet, the deeply three-lobed lip is also creamy-white, having a deep yellow hippocrepiform callus of nineteen ribs, with brownish lines to the keels, the anterior portion yellowish with a number of small purplish warts. It blossoms during the summer months. Introduced by Messrs. Backhouse & Son, York.—*Ecuador.*

SYN.—*Zygopetalum Backhousianum.*

P. BELLA, *Rehb. f.*—Reichenbach described this as being a grand beauty, with flowers larger than those of *P. cerina*. The sepals and petals are light or whitish violet, and have near their tips a broad band of the darkest purplish-violet; the lip is rather hooded, and of a whitish-yellow colour, with a large hippocrepiform callus, consisting of twenty-one ribs, the keels of which are purplish on their back line, the tip of the lip showing a large purplish violet blotch; the column is purplish with a triangular yellowish-white space at the base, covered with numerous purplish spots. It flowers during the spring months.—*New Grenada*.

SYN.—*Zygopetalum bellum*.

P. CERINA, *Rehb. f.*—A beautiful bulbless species, which produces from the crown tufts of several cuneate-oblong acuminate leaves 1 foot long, and from



PESCATOREA CERINA.

t. 183; *Xenia Orch.*, i. t. 65; *Flore des Serres*, t. 1815; *Floral Mag.*, 2nd ser., t. 93; *Parton. Fl. Gard.*, iii. p. 62, f. 263; *Orchid Album*, ix. t. 394; *Journ. of Hort.*, 1892, xxy, p. 35, f. 5.

SYN.—*Huntleya cerina*; *Zygopetalum cerinum*.

P. DAYANA, *Rehb. f.*—A very pretty and distinct species, with flowers similar in shape to those of *P. cerina*. The oblong-obovate sepals and roundish rhomboidal petals are of a milky white, the sepals tipped with green; the clawed oblong retuse emarginate lip, angulate at the base, is white, with the ruff or ring of folds forming the elevated callus purplish-violet, the base as well as the

their axils one-flowered peduncles much shorter than the leaves, each producing a handsome flower some 3 inches across; the sepals and petals are fleshy, concave, roundish oblong, of a pale waxy straw-colour, the lateral sepals being rather darker; and the lip is yellow, clawed, ovate convex retuse, with a thick semi-circular ruff or crest of numerous truncate plaits, within which is sometimes a band of deep purple, surrounding the base of the short clavate hoodless column. The plant is slow in growth but of easy culture, producing at various seasons its delicate-coloured flowers, which are of very long duration. — *Veragua, Chiriqui*, elevation 8,000 feet.

FIG.—*Bot. Mag.*, t. 3598; *Batem. Second Cent. Orch. Pl.*



PESCATOREA DAYANA.
(From the *Gardener's Chronicle*.)

rays in front of the callus being of the same colour, while the column is yellow with a broad reddish band at its base. It flowers in November and December.—*New Grenada*.

SYN.—*Zygopetalum Dayanum*.

P. DAYANA CANDIDULA, *Rehb. f.*—A chaste and beautiful variety, having the sepals and petals of a pure white, while the lip is tinted with purplish-crimson.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., iii. p. 342, f. 69.

P. DAYANA RHODACRA, *Rehb. f.*—A very distinct variety, in which the sepals and petals are tipped with purplish-rose.—*New Grenada*.

P. DAYANA SPLENDENS, *Rehb. f.*—A very lovely variety, having dark violet blotches at the tips of the sepals and petals, and the lip deep violet, which colour extends to the base of the column.—*New Grenada*.

P. GAIRIANA, *Rehb. f.*—A distinct and handsome species, which Reichenbach calls "glorious." The flowers are large, with the oblong ligulate sepals and petals deep violet, the anterior portion being of the deepest blackish-purple on the inner face; and the lip purplish rose-coloured or light purple mauve, with the front portion reflexed on the limb so as to be nearly hood-shaped, and marked by obscure longitudinal keels, between which are numerous warts; the large ruff or callus has from fifteen to seventeen radiating keels, and in some of the forms is orange-coloured with purple ridges; the column is dark violet above, whitish-yellow with some purple spots at the base. It is named in honour of the late John Gair, Esq., Falkirk, who grew the species of *Pescatorea*, and *Bollea* at one time to great perfection, better than we have ever seen them done since. It flowers during the summer months.—*Ecuador*.

SYN.—*Zygopetalum Gairianum*.



PESCATOREA KLABOCHORUM.

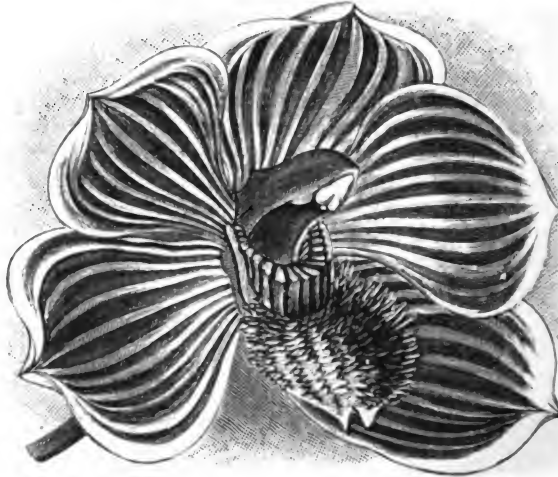
P. KLABOCHORUM, *Rehb. f.*—A very beautiful and free-flowering species, introduced by the late Franz Klaboch, after whom it is named. The flowers are

very large, from 3 to 3½ inches in diameter; the oblong obtuse sepals and the more wedge-shaped shorter petals are white deeply tipped with chocolate-purple, the tint of which seems to vary in the different varieties we have seen; the lip is trowel-shaped, three-lobed, ochre-coloured or white, with the whole surface except the margin covered with short purple-tipped papillae, *papulae radiantes* as Prof. Reichenbach calls them, ranged in lines; the ruff or callus at the base consists of nineteen lamellae, sulphur-coloured with brown keels, and the column is yellowish washed with brown and purple. Several varieties have been observed.—*Ecuador*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 431; *Orchid Album*, i. t. 17; *Paxton, Fl. Gard.*, reissue, t. 21; *Veitch's Man. Orch. Pl.*, ix. p. 53; *Gartenflora*, 1890, t. 1324.

SYN.—*Zygopetalum Klabochorum*.

P. LEHMANNI, *Rchb. f.*—This is one of the most charming species of *Pescatorea*, resembling in habit its congeners, being bulbless, with linear lorate acute leaves, from 1 to 1½ foot in height, and about an inch broad, the solitary flowers emerging from their axils. These flowers are large, from 3 to 3½ inches across, and very showy; the sepals and petals are broadly cuneate oblong, white with



PESCATOREA LEHMANNI.

close curved parallel lines of reddish-purple extending nearly to the edge; and the lip is deep mauve-purple, the anterior portion oblong, revolute, retuse, and covered with long bristle-like papillae of a purple tint, the callus or ruff of about eleven ridges being of a chestnut-brown colour. It appears to bloom at different times of the year.—*Ecuador*.

FIG.—*Orchid Album*, ii. t. 57; *Gard. Chron.*, N.S., xvii. p. 45, f. 5; *L'Ill. Hort.*, xxix. t. 471.

SYN.—*Zygopetalum Lehmanni*.

P. ROEZLII, *Rchb. f.*—This is a very distinct plant, though allied to *P. Dayana*. It seems to vary a great deal in the colouring of its large flowers; in the form usually met with the oblong sepals and cuneate obovate petals are white, beautifully tipped with violaceous lilac or purplish-rose, and the blade of the lip, excepting the callus, is of the same showy colours.—*Ecuador*.

P. RUCKERIANA, *Rchb. f.*—Allied to *P. Dayana*, from which it differs, however, by the acute undulate sepals and petals, which are somewhat twisted. In colour they are white with green extremities, and a large light purple area near the apex; the lip has some yellow at the base of the side lobes, purple at the anterior part, callus white. It was flowered in the collection of Herr Rücker-Jenison at Flottbeck, under the care of Herr Franz Kramer.—*Native country not stated.*

P. RUSSELLIANA, *Rchb. f.*—A large-flowered beautiful and free-flowering species, with broad sepals and petals which are cream-coloured, tipped with reddish-purple; the lip is of the same reddish-purple colour, with a yellow ruff or callus having fifteen lamellae with deep crimson-purple angles. It was named in honour of the late Provost Russell, of Falkirk.—*Ecuador.*

SYN.—*Zygopetalum Russellianum.*

P. WALLISII, *Linden et Rchb. f.*—This superb species resembles *P. cerina* in its general appearance, but has larger flowers. It forms a tuft of lorate acuminate leaves, from the axils of which issue the short peduncles, bearing each a solitary blossom of some 3 inches in diameter, the oblong obtuse apiculate sepals and rhomboid petals being of a rich creamy-white tipped with bluish-violet; the oblong retuse furrowed lip is of a deeper violet, with a white margin, and the ruff or callus of seventeen keels is also white tinted in front with purple; the column is white, with a band of dark violet at the base. It is a fine addition to this beautiful genus, requiring somewhat cool treatment.—*Ecuador.*

FIG.—*Flore des Serres*, t. 1828.

SYN.—*Zygopetalum Wallisii.*

PHAIO-CALANTHE, *Rolfe.*

(Tribe Epidendreae, subtribe Bletieae.)

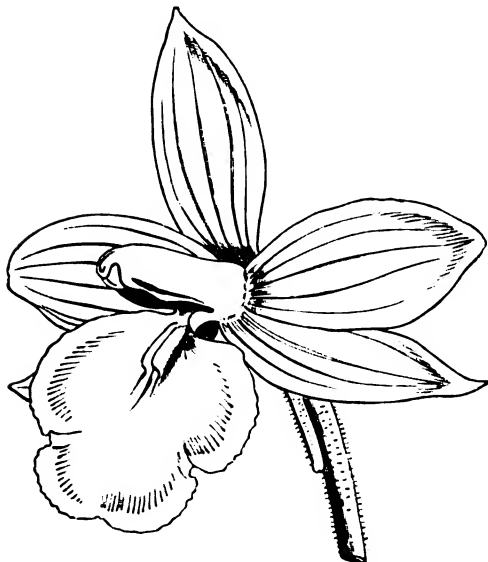
A small genus of hybrid Orchidaceous plants, which have been obtained between *Phajus* and a deciduous *Calanthe*, but the plants partake more of the character of a *Phajus* in their habit of growth, the flowers, too, more closely resemble those of the first named genus, but they show in the characters of the column their bi-generic origin more than in any other part, being stout and clavate, as in *Phajus*, but it is winged in the lower part as in *Calanthe*.

Culture.—Same as *Phajus*, which see.

P. IRRORATA, *Rolfe.*—This beautiful and pleasing variety is the result of a cross effected by the late Mr. Dominy between *Phajus grandifolius* and *Calanthe restioides*. The pseudobulbs are ovato-conical, and bear dark green lanceolate plaited leaves, similar to those of *P. grandifolius*; the flowers are produced in an erect raceme, and are about 3 inches in expansion, the sepals and petals cream-coloured tipped and flushed with rosy-pink, and the lip nearly round,

notched on each side near the front, the anterior part rather crisp, creamy-white, stained with yellow towards the base, where there are three obscure keels; the filiform spur is compressed, hairy, retuse and bilobed at the apex. The

flowers of this elegant form are produced during mid-winter, and the treatment recommended for the other kinds suits the plant admirably.—*Garden hybrid.*



PHAJIO-CALANTHE IRRORATA.

FIG.—*Floral Mag.*, t. 426; *Gard. Chron.*, 1867, p. 264, with fig.; *Id.*, N.S., xviii. p. 565, f. 100.

SYN.—*Phajus irroratus*.

P. IRRORATA PURPUREA, Rolfe.—A very pretty variety of the foregoing hybrid, with the sepals and petals white, the lip dull rose colour, and the throat yellow. It flowers in March and April.—*Garden hybrid.*

P. SEDENIANA, Rolfe.—A most interesting hybrid between an evergreen *Phajus*

and a deciduous species of *Calanthe*, the result of a cross between *Phajus grandifolius* and *Calanthe Veitchii*, raised in the nurseries of Messrs. J. Veitch & Sons, and described by Mr. Rolfe, in the *Gardeners' Chronicle*, as follows:—"The flowers are large with much of the general appearance of *Phajus*, though the lip shows a distinct approach to that of the *Calanthe*, while the bract also is very similar to that of the pollen parent. The segments are of a pale delicate primrose tint, the basal portion flushed with pale rose, the lip pale primrose, bright yellow at the base and along the three keels, each of the three lobes conspicuously flushed with rose on their upper portions; the side lobes are large, and the front one very distinctly emarginate; it might be described as four-lobed with two large side and two smaller front lobes."—*Garden hybrid.*

FIG.—*Veitch's Man. Orch. Pl.*, vi. p. 17.

SYN.—*Phajus Sedenianus*.

P. SEDENIANA ROSEA, Rolfe.—This is like the preceding, a hybrid between *Phajus grandifolius* and *Calanthe Veitchii*, but resulted from the reverse cross, the *Calanthe* being the seed-bearing parent. It was raised by Mr. W. Lambert, gardener to John Riley, Esq., of Hapton House, Lancashire. "It differs from the original form in having the lip light rose colour, marbled with a somewhat deeper shade, and in having a rosy-red line down the centre of each petal."—*Garden hybrid.*

PHAJUS, Loureiro.(Tribe Epidendreae, *subtribe* Bleticeae.)

A fine genus of tall-growing terrestrial Orchids, which produce their well-furnished racemes of beautiful flowers very freely, and which when well grown are noble objects. The name is sometimes written *Phaius*. The stems are in some of the species pseudobulbous; the leaves are large and plicate; the flower scape in the genuine species is erect and leafless, and the flowers, which grow in racemes, are large and showy. The sepals are free, and the lip gibbose or spurred at the base, its lateral lobes broad and rolled over the elongated footless column. There are upwards of a dozen species, which are found in Tropical Asia, India, Ceylon, the Malay and Philippine Islands, Madagascar, Australia, and China. A few leafy-stemmed species with nodding racemes are now referred to the genus *Thunia*.

Culture.—These plants are of easy culture, but they will amply repay any amount of attention and care. They are of large growth, and even when not in bloom their noble foliage is extremely ornamental. If fine specimens are wanted, they should be grown in pots of large size, with loam, leaf mould, and rotten cow-dung, as directed in the remarks on Terrestrial Orchids. They require plenty of heat and moisture at their roots in the growing season, but the water should not touch the young growth. During their period of rest they may be placed in a cooler house, and should then be supplied with very little water. Propagation is effected by dividing the bulbs after the blooming season is past.

P. ALBUS.—See *THUNIA ALBA*.

P. AMABILIS, *O'Brien*.—A hybrid raised in the nurseries of Messrs. J. Veitch & Sons, between *P. grandifolius* and *P. tuberculosus*. The growth is intermediate between the two parents; the flowers measure about 3 inches in diameter; sepals and petals white tinged with rose; "lip claret colour, with darker purplish lines, and whitish ground at the base inside; the base of the labellum being yellow on the outside, the edges being beautifully crimped."—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiii. p. 229, f. 32; *Journ. of Hort.*, 1893, xxvi. p. 453, f. 82.

P. BERNAYSII.—See *P. BLUMEI BERNAYSII*.

P. BICOLOR, *Lindl.*—This old species was, according to Lindley in his *Sertum Orchidaceum*, received by him from Mr. James MacRae, and was found

growing in dry pastures on the sides of high hills near Peradeniya in Ceylon. "From a fleshy, knobby rhizome like that of an Iris, the leaves and flower-stems spring independently of each other;" the leaves are about $1\frac{1}{2}$ foot long, plaited and sharp-pointed, invested at the base with green scales; flower spikes 2 feet high, producing flowers about 4 inches in diameter; "sepals and petals linear-lanceolate spreading, taper-pointed, and nearly of the same size; the lip is very much broader, oblong, rolled round the column, much undulated at the edge, acuminate and curved downwards at the upper end, with a pink limb and a yellow tube." There are two varieties of this plant, one with crimson sepals and petals and a pink lip, and the other yellow except the lip.—*Ceylon*.

FIG.—*Sertum Orch.*, t. 23; *Bot. Mag.*, t. 4078.

P. BLUMEI, *Lindl.*—A very handsome plant, resembling *P. grandifolius* in its habit of growth, as it does also in the size and the shape of its flowers. From a creeping root-like caudex it produces roundish ovate pseudobulbs, which are marked by annular scars, and develop lanceolate acuminate strongly plicate leaves 2 feet long; the scape springs up from the base of the bulbs and grows 3 to 4 feet high, terminated by a floral raceme a foot long; the sepals and petals are lanceolate acuminate, olive brown, the lip rolled up over the column, ochraceous outside, the larger ovate undulated front lobe mucronate, crimson with a yellowish margin. It flowers during the spring months.—*Java*.

FIG.—*Blume, Orch. Arch. Ind.*, t. 1, et t. 5 D; *De Vriese, Ill. Orch.*, tt. 8, 11; *Gartenflora*, t. 464.

SYN.—*Limodorum Incarcillei*.

P. BLUMEI ASSAMICUS, *Rehb. f.*—A very distinct variety, which appears to vary considerably in the colour of its sepals and petals, from light yellow to reddish-brown, and the lip from light yellow bordered with white to orange bordered with purple.—*Assam*.

FIG.—*Reichenbachia*, 2nd ser., ii. t. 69.

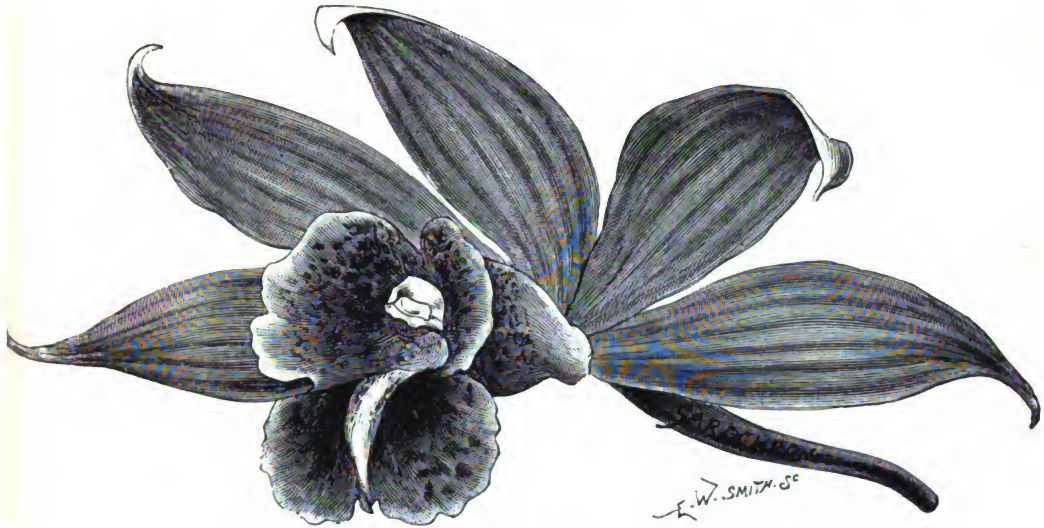
P. BLUMEI BERNAYSII, *Rehb. f.*—A very showy variety, closely resembling *P. Blumei* in habit and general appearance, the pseudobulbs being roundish ovate, the dark green leaves lanceolate and strongly nervose, and the racemes of flowers terminating scapes from 2 to 3 feet high; the sepals and petals are lanceolate acuminate, white outside, soft pale yellow within; and the lip is three-lobed, as long as the petals, the convolute portion sulphur-yellow, the lateral lobes rounded white, the middle lobe orbicular apiculate, with a white wavy recurved margin, yellow on the disk, and a conical curved greenish spur.—*Australia: Queensland*.

FIG.—*Bot. Mag.*, t. 6032.

SYN.—*P. Bernaysii*.

P. BLUMEI SANDERIANUS, *Hort.*—This fine and distinct variety was imported from the north of Assam, and was exhibited at the Temple Show of the Royal Horticultural Society in May, 1892, when it was awarded a first class certificate. "The sepals and petals are glossy bronze in colour; the lip very large, with a bold margin of white, having a large blotch of a dusky rose shade."—*Assam*.

P. COOKSONII, *Rolfe*.—A very beautiful and highly interesting plant, being a hybrid raised by N. C. Cookson, Esq., to whom it is dedicated. It is the first true hybrid *Phajus* ever raised, and is the result of a cross between *P. Wallichii* and *P. tuberosus*. It is of bold growing habit, with small ovate pseudobulbs, which produce numerous oblong acute leaves, from 2 to 3 feet long, of a rich deep green; scape erect, bearing near the summit from nine to twelve of its large and beautifully coloured flowers, which last a long time in perfection; sepals and petals oblong, lanceolate, the latter somewhat narrower than the



PHAJUS COOKSONII.
(From the *Gardeners' Chronicle*.)

former, light rose with a shade of yellow, deepest in colour in the middle; lip three-lobed, broadly oval, the basal half convolute over the column where the colour is greenish yellow, the middle lobe crisped and beautifully undulated at the edge, the recurved tips of the side-lobes of a deep rosy-purple, the apical part soft rose spotted with dark rosy-purple; throat tawny yellow, which is continued into a stripe to the apex. A fine specimen of this rare hybrid is in the collection of M. le Comte Adrien de Germiny, of Gouville, France.

FIG.—*Gard. Chron.*, 3rd ser., 1890, vii. p. 389, f. 57; *Reichenbachia*, 2nd ser., i. t. 14; *Orchid Album*, x. t. 478.

P. GRANDIFOLIUS, *Loureiro*.—This noble evergreen terrestrial Orchid is an old inhabitant of our gardens, having been introduced upwards of a century ago. It has largish ovate pseudobulbs, oblong-lanceolate acute plicately nervose leaves, and radical scapes 3 feet or upwards in height, bearing long erect racemes of showy flowers, of which the oblong lanceolate sepals and petals are white on the outer surface, and of a chocolate brown within; the oblong cucullate lip, the base of which is folded over the column, is white stained with yellow on the throat and disk, and there veined with crimson, the sides of the convolute

portion being also flushed with crimson both outside and in. It blooms during the winter and spring months, and lasts long in beauty if kept in a cool house.



PHAJUS GRANDIFOLIUS.

This is a most useful plant for winter blooming, as it will flower beautifully when grown in small pots, and in this state may be used for the decoration of apartments during the dull months, without suffering the least injury. It also makes a noble plant for exhibition when grown into a large specimen, but to retard it for this purpose it requires to be kept very cool during autumn and winter. The variety **SUPERBUS** figured by Van Houtte has the inside of the sepals and petals of a brilliant chamois, and the lip bright amaranth margined with rose.—*China; Australia.*

FIG.—*Bot. Mag.*, t. 1924; *Lodd. Bot. Cab.*, t. 20; *Flore des Serres*, t. 738 (*superbus*); *Aiton, Hort. Kew.*, iii. t. 12; *Andr. Bot. Rep.*, t. 426; *Schneevogt Icon. Pl.*, t. 5; *Redouté, Lil.*, t. 43; *Gard. Chron.*, 1872, p. 733, f. 176 (specimen plant); *Id.*, n.s., xviii. p. 565, f. 99; *Kerner, Hort. Semp.*, t. 49; *L'Her. Ser. Ang.*, t. 28.

SYN.—*Phajus Tankervillei*; *Bletia Tankervilleae*; *Limodorum Tankervilleae*; *Pachyne spectabilis*.

P. GRAVESII.—See *P. HYBRIDUS GRAVESII*.

P. HUMBLOTII, *Rehb. f.*—A remarkable and beautiful new species, which bears its large showy blossoms in few-flowered racemes. The sepals are oblong acute, the petals twice as broad, and the large spurless lip three-lobed, the lateral lobes roundish and brought forward, the middle lobe transversely emarginate, and the disk bearing a fleshy saddle-shaped bi-lamellate callus running out in front into a little keel; the flowers are rose-coloured with blotches of white and red. A variety was exhibited by Sir T. Lawrence, Bart., in 1886, at South Kensington, being wholly rose-coloured, with a deep rosy-crimson lip.—*Madagascar.*

FIG.—*Gard. Chron.*, n.s., 1886, xxvi. p. 173, f. 33; *Journ. of Hort.*, 1886, xiii. p. 119, f. 17; *Reichenbachia*, i. t. 17; *Le Moniteur d'Hort.*, 1890, p. 162; *Lindenia*, vi. t. 254; *Revue Hort. Belge*, 1890, p. 265, t. 23; *Gartenflora*, 1891, t. 1353; *Revue Hort.*, 1891, p. 204 (plate); *Veitch's Man. Orch. Pl.*, vi. p. 12.



PHAJUS HUMBLOTII.

P. HYBRIDUS, *O'Brien.*—A cross obtained by N. C. Cookson, Esq., between *P. grandifolius* and *P. Wallichii*. "The sepals and petals have traces of the coppery-yellow tint of *P. Wallichii*, and the spur is rather longer than in *P. grandifolius*, but the keels running down the middle of the lip and its general form are very much as in *P. grandifolius*."—*Garden hybrid.*

P. HYBRIDUS GRAVESII, *Rolfe*.—This was also raised by N. C. Cookson, Esq., and is the inverted cross of the preceding. "The general habit and shape of flower is much like that of *P. Wallichii*; the flower 5 inches across, the sepals and petals cinnamon-brown in front and white behind, and the lip white with a yellow keel, and rose-pink in front." It flowered in the collection of H. Graves, Esq., of Orange, New Jersey, to whom it is dedicated.—*Garden hybrid*.

FIG.—*Orchid Review*, i. p. 241, f. 13.

SYN.—*P. Gravesii*.

P. IRRORATUS.—See PHAIO-CALANTHE IRRORATA.

P. MACULATUS, *Lindl.*—A very handsome species, by far too much neglected by the majority of Orchid growers, being of a very showy character during the spring months. The pseudobulbs are large, ovate, oblong; the leaves are ovate-lanceolate acuminate, plicate, dark green spotted with yellow; the scapes are 2 feet or more in height springing from the side of the bulbs, and bearing a raceme of ten or twelve flowers, which are yellow, the lip involutely cylindrical, fleshy, with a blunt spur, three-lobed in front, the middle lobe plicate-crenate streaked with reddish-brown at the edge. There are two varieties of this plant, the best one being very showy and desirable.—*Northern India; Japan*.

FIG.—*Bot. Mag.*, t. 2719; *Id.*, t. 3960; *Blume, Orch. Arch. Ind.*, t. 5 E; *Lodd. Bot. Cab.*, t. 1803; *Rehb. Fl. Exot.*, t. 65; *Hook. First Cen. Orch. Pl.*, t. 40; *Orchid Album*, viii. t. 381; *Journ. of Hort.*, 1893, xxvi. p. 397, f. 72.

SYN.—*Bletia Woodfordii*; *B. flava*.

P. PHILIPPINENSIS, *N. E. Brown*.—This new species appears to be the first that has been recorded from the Philippine Islands, and was introduced by Messrs. J. Veitch & Sons. "The pseudobulbs are $1\frac{1}{2}$ to 2 inches long, cylindrical; leaves petiolate, 10 to 20 inches long, $1\frac{1}{4}$ to 2 inches broad, lanceolate, acuminate, plicate, bright green; scape about as long as the leaves; . . . flowers $2\frac{1}{2}$ inches in expanse; sepals and petals oblong-lanceolate, sub-acute, the petals a little narrower than the sepals, all flat, spreading, and directed upwards, of good substance, white outside, reddish orange-brown inside with a narrow yellow edge; lip 1 to $1\frac{1}{4}$ inch long, trumpet-shaped with a truncate mouth; the margin recurved, crenate, and more or less frilled, but not three-lobed inside; . . . spur almost wanting, reduced to a very small, blunt chin" (N. E. Brown in *Gardeners' Chronicle*, 3rd ser., 1889, vi. p. 239).—*Mindanao, Philippine Islands*.

P. ROSEUS, *Rolfe*.—Said to be a very distinct plant, collected by the Earl of Scarborough, with whom it flowered in December, 1892. Its habitat is not known with certainty, but it is believed to be of West Tropical African origin. "The flowers are of a delicate rose shade, the lip somewhat marbled with white spots, the disk with a white hairy fleshy keel and a minute tooth at the apex and the spur deep yellow. In fading the flowers pass to a light orange-buff shade" (*Kew Bulletin*, 1893, p. 6).—*West Tropical Africa (?)*

P. SEDENIANUS.—See PHAIO-CALANTHE SEDENIANA.

P. TANKERVILLEI.—See P. GRANDIFOLIUS.

P. TUBERCULOSUS, Blume.—A very handsome and distinct species, producing short fusiform fleshy stems, from which proceed the new growths bearing a tuft of oblong-acuminate plicate leaves about a foot long. The erect flower stems are produced with the young leafy growths and terminate in a raceme of six or more flowers, which are each about $2\frac{1}{2}$ inches across; the sepals and somewhat broader petals are pure white, and the lip, which is obliquely funnel-shaped, has the two broad side lobes yellow thickly marked with dull crimson spots, which on the yellow ground produce a bronzy effect, while the front lobe is roundish emarginate smaller and wavy, white with rosy-purple spots, the disk being decorated with orange-yellow crests. It is to be regretted that this plant should prove difficult of cultivation, as it is one of the most beautiful Orchids we have seen for many years. It blossoms during January and February. The plants should be grown in a temperature ranging from 65° to 70° , keeping the sun from them as much as possible. They should be potted in equal parts of peat and moss, with a small quantity of sharp sand, and plenty of crocks and charcoal as drainage. When making their growth they delight in an abundance of moisture at the roots. We find it necessary to sponge them weekly, as red spider,



PHAJUS TUBERCULOSUS.

thrips, and green fly are particularly fond of them. This plant is well cultivated by Mr. Jaques, gardener to Baron F. de Rothschild, Aylesbury.—Madagascar.

FIG.—*Orchid Album*, ii. t. 91; *Blume, Orch. Arch. Ind.*, t. 11 B; *Du Pet. Thoms, Orch. Iles d'Afr.*, t. 31; *Gard. Chron.*, N.S., xv. p. 341, f. 67; *Id.*, xviii. p. 565, f. 101; *Journ. of Hort.*, 1887, xiv. p. 215, f. 39 (var. *superbus*); *Lindenia*, vii. t. 326; *Veitch's Man. Orch. Pl.*, vi. p. 13; *Gartenflora*, 1891, t. 1339; *Reichenbachia*, 2nd ser., i. t. 4; *Revue Hort. Belge*, 1893, p. 145, t. 13; *Gard. Chron.*, 3rd ser., 1893, xiii. p. 237, f. 35.

SYN.—*Limodorum tuberosum*; *Bletia tuberosa*.

P. WALLICHII, Lindl.—A large-growing plant of great beauty, attaining some 4 or 5 feet in height, producing its long upright racemes of flowers in March, April, and May, and continuing to flower for six weeks. The plant has entirely the habit of *P. grandifolius*, having largish ovate pseudobulbs, tufts of oblong-lanceolate nervose leaves, and tall flower scapes springing from the side of the pseudobulbs; the flowers are white externally, orange-yellow or buff suffused with reddish-purple inside; the sepals and petals are lanceolate, and as well as the cucullate crispy-edged lip much acuminate, the spur being curved and emarginate. It makes a noble plant for winter blooming, and, if retarded



PHALAENOPSIS AT HOME.

(From the *Gardener's Chronicle*.)

as directed for *P. grandifolius*, is invaluable for exhibition purposes. For further notice of these plants, see chapter on Preparing Orchids for Travelling to Exhibitions.—*India*; *Sylhet*.

FIG.—*Wall. Pl. Asiat. Rar.*, ii. t. 158; *Paxton, Mag. Bot.*, vi. p. 193, with tab.; *Bot. Mag.*, t. 7023.

PHALAENOPSIS, Blume.

(Tribe Vandeeae, subtribe Sarcantheeae.)

A moderately extensive genus of epiphytes, the species of which are not of very large growth, but the flowers of several of them are magnificent and last long in beauty. The genus has, moreover, received several grand and meritorious accessions within the last few years, so that it is much and deservedly esteemed, and worthy of a place in every collection, no less for the attractions of its flowers than for the comparatively small space which the plants occupy. The known species are all compact handsome plants, without pseudobulbs, but emitting stout fleshy roots from the crown, and also producing very thick distichous leaves, from the axils of which the scapes of charming flowers arise. The flowers are remarkably showy, with spreading sepals, much broader petals contracted at the base, and a spurless lip spreading from the base and continuous with the column, the disk and base of the lamina variously appendiculate. The flowers themselves are very freely produced, and last a long time; indeed, they may be had in bloom all the year round. We have seen *P. grandiflora* blooming for six months, and have ourselves exhibited the same plant for seven years at six exhibitions during each year, and sometimes with as many as from seventy to eighty flowers expanded on it at one time. Some of the species of *Phalaenopsis* now in cultivation are amongst the finest Orchids yet introduced to this country, and no collection, however small, should be without an adequate number of representatives of these lovely plants, which are free-flowering, and, as we have already pointed out, continue for a long time in perfection—qualities which proclaim them to be plants of more than ordinary value.

There are two sections—*Euphalaenopsis*, in which the petals are much broader than the sepals, and the apex of the lip is emarginate or divided into two divaricate or cirriferous lobes; and *Stauroglottis*, in which the petals and sepals are similar and the tip of the lip entire. The species now number two dozen or more, and are found in the Malay Archipelago, Philippine Islands, and in the eastern provinces of India.

Culture.—The various species all require the same kind of treatment, and an East Indian heat, together with a good supply of water during their growing season, for they are found in Tropical Asia, *e.g.*, Java, Borneo, Sumatra, the Sunda and Philippine Isles, or some in the Burmese territory and other parts of the East, where the heat is high, a natural condition which under artificial circumstances ought to be imitated as nearly as possible. They are found growing on bare rocks and on the branches of trees in damp moist places, where, during the rainy season, an immense quantity of water falls. Nevertheless they are of easy culture, and if properly attended to are seldom out of order; but since they have no succulent pseudobulbs to support them, they require, in order to grow them to perfection, somewhat more care and attention than the majority of the plants belonging to this natural order. Thus, they need more moisture at their roots during the growing season—in fact, they should never be allowed to get dry, for if so, they are apt to shrivel, and often lose their bottom leaves, which spoils their appearance, the beauty of these plants consisting almost as much in their having good foliage as good flowers.

The growing season is from March to the end of October, during which time the temperature by day should range from 70° to 75°, allowing it to rise to 80° or more by sun heat, provided the house be shaded, for the sun will scorch the thick fleshy leaves, and if so scorched they will soon decay and spoil the plant. Sometimes they will do better in one part of the house than in another, therefore if they do not succeed in one part, the cultivator should remove them to another. The night temperature should range from 65° to 70° in March and April, but later on it may be allowed to rise a few degrees higher. During their resting season, from the end of October to February, the temperature should range from 60° to 65° by night, and 65° by day, or even a little more with sun heat will not do any harm. In ventilating the house air should be admitted close to the hot-water pipes, so that it may be warmed before it becomes dispersed over the house, and to keep up a moist atmosphere some water should be sprinkled about on fine days, but this should be done in the morning, so that the house may become dry by night.

The species of *Phalænopsis* are grown in different ways. Sometimes they are placed on blocks, rafts, and cylinders, at others in pots or in

baskets. We have found them to succeed well under all three modes of treatment; they require, however, more moisture at the roots if grown on blocks or rafts, whilst if grown in pots, more drainage will be required than when they are planted in baskets. For pot culture, the best way is to place an inverted pot in the bottom of the one intended for the plant, and fill in the intervening space with potsherds, broken into pieces about 2 inches square, to within 2 inches of the rim; sphagnum, having a few small pieces of charcoal mixed with it, should then be placed upon the drainage, and the plant elevated 3 inches above the rim, taking care to keep the base of the plant well above the moss. The successful culture of *Phalaenopsis*, as well as of all other plants, depends upon efficient drainage. If grown on blocks or rafts they should be placed on good-sized ones, so that there may be plenty of surface for the roots to cling to. In fastening the plant on, first place a little live sphagnum on the block, then fix the plant on with copper wire, and afterwards hang it up near the roof, but not too near the glass, or the plants may get injured by cold, which should be specially guarded against during winter.

If the plants should get into an unhealthy condition, the best plan is to turn them out of their pots or baskets, and shake all the material away from their roots, wash them with clean water, cut off all the decayed parts of roots or leaves, and replace them on blocks or rafts with a little sphagnum, giving them a good supply of moisture, and placing them at the warmest end of the house, but not too much exposed to the light. Under this treatment they will soon begin to root and improve in appearance. We need hardly add that they should be kept clear of insects, especially of the thrips, which soon disfigure the foliage. Constant attention is necessary, as they require the frequent washing of the leaves with a sponge and clean tepid water, or the fumigation of the house with tobacco smoke, to keep them clear of all such pests; the latter operation, however—that of fumigation—should be conducted with great care.

These plants are difficult to propagate, as they supply few opportunities for division. To this rule, however, *P. Lüddemanniana* is an exception, as it produces young plants upon the flower scapes very freely. Sometimes the other species also will produce young plants on the old flower stems, and we have seen *P. Stuartiana* produce them upon its

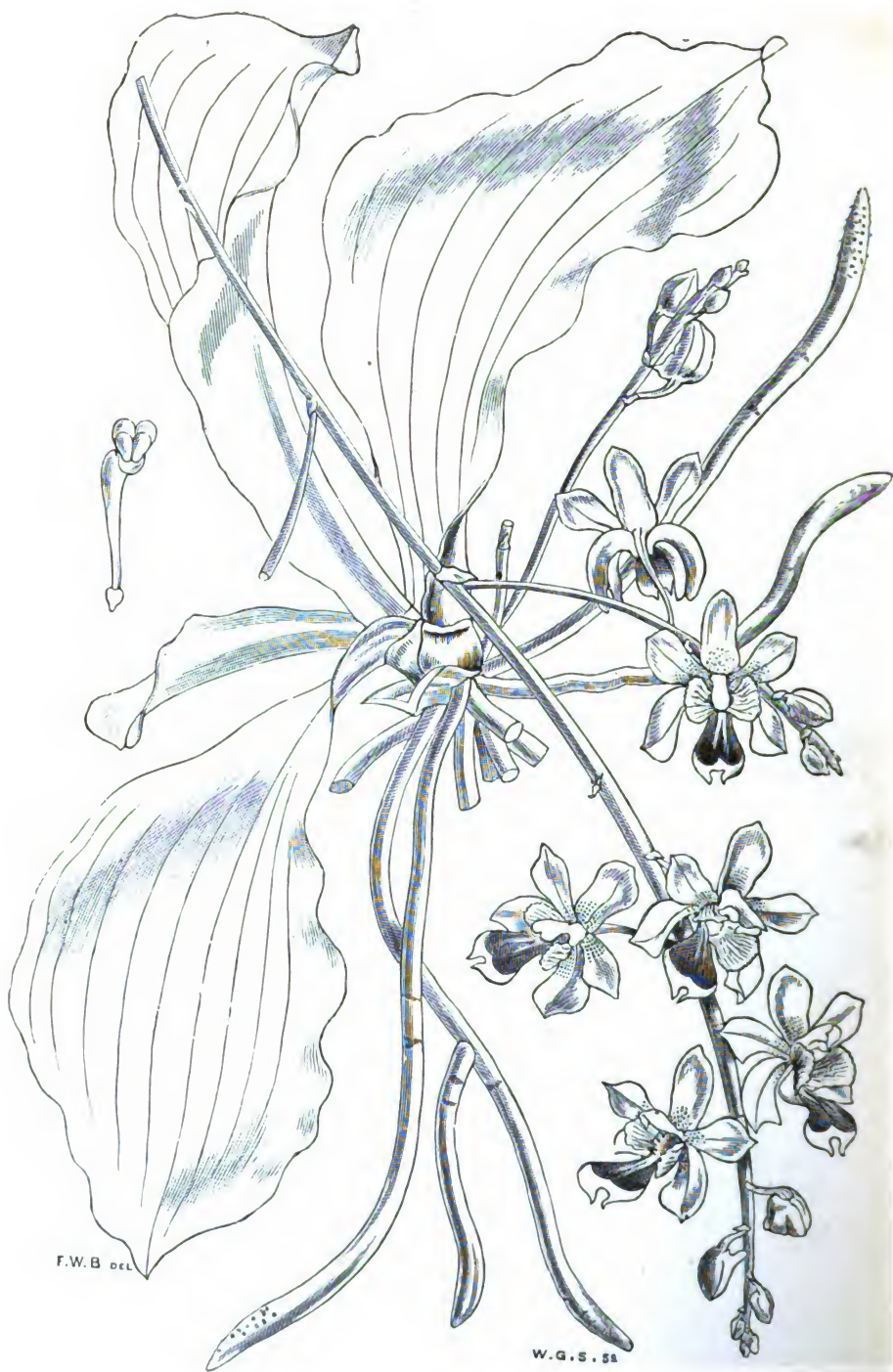
roots. When this happens they should be left on till well rooted, and then placed on small blocks.

Too much water must not be given to these plants at any time, and they must not be watered overhead in the winter, or during dull weather. or disastrous results may follow. The reader would do well to refer to our remarks on watering at page 70.



PHALAENOPSIS AMABILIS.

P. AMABILIS, *Lindl.* (? *Blume*).—The Queen of Orchids. This magnificent plant, which attaches itself to the trunks of trees by its stout fleshy roots, pro-



PHALAENOPSIS AMETHYSTIANA.
(From the *Gardeners' Chronicle*.)

duces its graceful racemes of flowers nearly all the year round. The large thick elliptic-lanceolate obliquely retuse leaves form a distichous tuft, and from their axils proceed the long drooping racemes of spreading flowers, which are each 3 inches across, and arranged in a distichous manner along the rachis; the elliptic-ovate sepals and the broad sub-rhomboidal petals are pure white, the lip of the same colour, but beautifully streaked and spotted inside with rose-pink and yellow, shorter than the sepals, three-lobed, the side lobes ascending petaloid, the central lobe hastate, bearing at the extremity two incurved twisted cirrhi. The flowers continue in perfection a long time, if they are kept free from damp, but if allowed to get wet they are apt to become spotted. There are many varieties of this fine species.—*Java, Amboyna; Philippine Islands.*

FIG.—*Bot. Mag.*, t. 4297; *Bot. Reg.*, 1838, t. 34; *Blume, Tabellen*, t. 44; *Id.*, *Rumphia*, tt. 194, 199; *Flore des Serres*, t. 36; *Moore, Ill. Orch. Pl. (Phalaenopsis)*, t. 1; *Bennett, Fl. Jac.*, t. 8; *Maund, Botanist*, iii. t. 133; *Parson, Mag. Bot.*, vii. p. 49, with tab.; *Lindenia*, ii. t. 79; *Revue Hort. Belge*, 1890, p. 25, t. 3; *Vitch's Man. Orch. Pl.*, vii. p. 22.

SYN.—*P. Aphrodite*.

P. AMABILIS DAYANA, *Hort.*—A very beautiful and distinctly marked variety, named in compliment to the late John Day, Esq., of Tottenham, by whom it was first flowered. It has very large flowers, of which the two lower sepals are thickly but distinctly dotted with carmine over about half their surface; and the lip has the side lobes coloured deep yellow at the lower edge, and the central trowel-shaped or hastate lobe heavily marked with carmine-crimson across the base, having a distinct stripe of the same colour down its centre.—*Eastern Archipelago.*

FIG.—*Orchid Album*, i. t. 11.

P. AMABILIS GRANDIFLORA.—See *P. GRANDIFLORA*.

P. AMETHYSTINA, *Rehb. f.*—An elegant little plant, perhaps the dwarfiest of *Phalaenopsis*, which, though not so showy as some of its congeners, is yet a nice addition to this beautiful and popular family. The plant is furnished with dark-coloured flattened roots, and the leaves are cuneate-obovate acute, striated, 3 to 4 inches long, stout, waved at the edges, and dark green; the scape is about a foot long, sometimes with a few short branches, and bears several rather small flowers, the sepals and petals white, spreading, and the lip white, tinged with yellow at the base, the centre part rich amethyst suffused with purple, three-lobed, the lateral lobes wedge-shaped, the central one rhombiform with two small cirrhi at its base, and deeply emarginate in front; the flower is prolonged at the back into a short spur.—*Sunda Isles.*

FIG.—*Gard. Chron.*, 1870, p. 1731, f. 299; *Puydt, Les Orch.*, p. 224, f. 226—7.

P. AMPHITRITE, *Kränzlin*.—This new hybrid is, according to Dr. Kränzlin, a cross between *P. Stuartiana* and *P. Sanderiana*. "The size of the flower is that of a very good *P. Stuartiana* or a smaller *P. Sanderiana*; the sepals are narrower than in *P. Sanderiana*, pale mauve, or deep nankeen yellow, with a white margin and a purplish hue at the base, the lateral ones spotted with minute purple blotches at the very base; the petals are also in the way of *P. Sanderiana*, white, with a rose-purple blotch at the base; the lip is perhaps still more than the other parts that of *P. Sanderiana*, in the form as well as in the colour."—*Garden hybrid.*

P. ANTENNIFERA, *Rchb. f.*—This species is in the way of *P. Esmeralda*, but is totally distinct in colour. It was introduced and flowered by us for the first time. The plants have the habit of *P. Esmeralda*, but are altogether stronger, and the foliage is entirely green; the flowers grow on scapes upwards of 2 feet long, and have the same shape as those of the species just named; the sepals and petals are light rose colour, the tips of the sepals brick red outside; and the unguiculate lip is tri-fid, the side laciniae and basilar antennae deep orange striped with red, and the anterior lobe amethyst. We have had plants of this species producing a branched inflorescence. It blooms in September and October.—*Burmah*.

P. APHRODITE.—See *P. AMABILIS*.

P. BRYMERIANA.—See *P. INTERMEDIA BRYMERIANA*.

P. BUYSSONIANA, *Rchb. f.*—A fine species, dedicated to M. le Comte F. Du Buysson, a distinguished Belgian Orchidist. It is allied to *P. Regnieriana*, but the flowers are far brighter in colour. "The sepals and petals are of a bright purple hue, the lateral sepals are bordered inside with white; petals much broader than those of *P. Regnieriana*, and appear always to be hooded over the column; the processes on the stalk of the lip are median, filiform-linear, not triangular as in *P. Regnieriana*; the three spreading laciniae of the anterior part of the lip are equal, lanceolate-oblong, blunt-acute; there is an emarginate small callus at the beginning of the stalk, and in front of it stands on the disk between the side laciniae, a thickened line with two furrows; the three laciniae are of a vivid scarlet inside, side-laciniae outside ochre-coloured with numerous scarlet lines" (H. G. Reichenbach, in *Gardeners' Chronicle*, 3rd ser., 1888, iv. p. 295).—*Cochin China* (?)

P. CASTA, *Rchb. f.*—This plant is supposed to be a natural mule, having the leaves of *P. Schilleriana* and the flowers of *P. amabilis*. The leaves are slightly spotted in the young state, but the spots disappear as they attain maturity; the flowers are white as in *P. amabilis*, the bases of the upper sepals and petals being slightly tinted with purple, and those of the lateral sepals spotted; the callus resembles that of *P. amabilis*.—*Philippine Islands*.

FIG.—*Orchid Album*, v. t. 229; *Reichenbachia*, ii. t. 87.

P. CORNINGIANA, *Rchb. f.*—A handsome species allied to *P. sumatrana*, but quite distinct in the peculiar callosity of the base of the lip. The sepals are bluntly keeled on the outer surface, the upper one cuneate-oblong, marked with longitudinal purple-brown stripes and a few transverse bars at its base, the longitudinal bars merging into numerous hieroglyphical blotches; the deflexed lateral sepals are almost wholly purple-brown bordered and spotted with yellowish-white; the cuneate oblong-ligulate petals are marked with longitudinal purple-brown bars and blotches, and the lip, which is bent in front of the claw so as to stand forward, has its side lobes erect ligulate retuse, with a small bristle on the upper angle, white, yellow on the umbonate callus in the middle, the central part oblong-ligulate, of a rich violet-purple, with a tuft of hairs on the anterior middle line. It is named in honour of Erastus Corning, Esq., of Albany, N.Y. The plant flowers during the spring months.—*Eastern Archipelago*.

P. CORNU-CERVI, *Blume et Rehb. f.*—A very pretty bulbless Orchid, which, though not particularly showy in a small state, blooms very freely when grown vigorously. The leaves are distichous leathery cuneate-oblong, 8 inches or more in length, and of a bright green colour; the peduncles are lateral, erect, clavate, flattened out towards the apex, where from six to twelve flowers are produced in succession; the dorsal sepal is narrow lanceolate, the lateral ones slightly falcate, the former greenish-yellow cross-barred with reddish-brown, and having a wider blotch at the base, the latter with the outer halves only barred with brown; the petals are somewhat smaller, greenish-yellow with cross-bars of brown; and the lip is whitish, clawed, hollowed on the disk, and incurved, tripartite, the lateral divisions bluntly oblong, the intermediate one crescent-shaped and apiculate. "This curious Orchid is found in abundance on the stunted bushes in the swampy islands at the mouth of the river Irrawaddy. In this situation being exposed to the sun during the dry season, it loses its leaves, its roots being kept plump by the night dews, and it consequently has a distinct resting season. Plants of the same Orchid growing in the shade have no resting season, being a mass of blossom throughout the dry season, and losing none of their leaves. A generous treatment best suits this plant in cultivation, and better flower-spikes are obtained by cutting back the old flower-stems just before the resting season" (Major-Gen. Emeric S. Berkeley, in *Gardeners' Chronicle*, 1887).—Moulmein.

FIG.—*Bot. Mag.*, t. 5570; *Batm. Second Cent. Orch. Pl.*, t. 178; *Kuhl & Hasselt, Gen. et Sp. Orch.*, t. 1.

SYN.—*Polychilos cornu-cervi*.

P. DENTICULATA, *Rehb. f.*—According to Mr. Hugh Low, who flowered this curious plant, it resembles *P. Mariae* in growth. The sepals and petals are oblong lanceolate, acute, white spotted with brown; lip white, the front lobe strap-shaped, concave, toothletted in front, keeled in the middle; lateral lobes also strap-shaped, toothletted and retuse outside, keeled transversely, light yellow in front with three mauve lines.—*Native country not stated*.

P. EQUESTRIS.—See *P. ROSEA*.

P. ESMERALDA, *Rehb. f.*—Although not competing with some of the showier kinds as regards the size of the blossoms, this species is nevertheless worthy of cultivation on account of the attractive colouring of its flowers. The leaves are oblong ligulate acute; and the flowers, which are produced on the usual lateral scapes, and are about the size of those of *P. equestris*, from fifteen to twenty in an erect raceme, have bluntly oblong sepals and petals, and a three-lobed lip of which the two largish lateral lobes are oblong divaricate, and the front lobe is longer and linguiform; they are of a uniform brilliant amethyst colour, and produced during the summer months.—*Cochin China*.

FIG.—*Floral Mag.*, 2nd ser., t. 358; *Orchid Album*, vii. t. 321; *Lindenia*, vi. t. 263 (var. *candidula*); *Bot. Mag.*, t. 7196.

SYN.—*P. Regnieriana*.

P. "F. L. AMES," *Rolfe*.—A handsome *Phalaenopsis* of hybrid origin, being a cross between *P. grandiflora* and *P. intermedia*, raised by Mr. Seden. The flowers have the general shape of those of *P. grandiflora*, and measure nearly 3 inches across; the sepals are oblong lanceolate, white, the petals

spathulate, also white; lip yellowish-white mottled and suffused with reddish-purple. It has been named in honour of the late Hon. F. L. Ames, of North Easton, Mass., U.S.A.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iii. p. 201, f. 32; *Vitch's Man. Orch. Pl.*, vii. p. 48.

P. FÖRSTERMANII, *Rchb. f.*—Described as a "small, modest, and yet very elegant species," named in honour of its discoverer, Mr. Försterman. Leaves cuneate obovate, unequally bidentate at the apex; flowers small, white; sepals and petals cuneate lanceolate, with very thin forked or hieroglyphic brown transverse lines inside; lateral lobes of the lip square, oblong, a little recurved, scimitar-shaped, retuse, with a retrorse bristle, and an oblique keel outside; a yellow callus on the inner side of each; mid-lobe tridentate at the apex.—*Native country not stated*.

P. GLORIOSA, *Rchb. f.*—This handsome plant was introduced by the late Mr. Stuart Low, and is allied to *P. amabilis*, Lindl., but differs from that species in having a narrow deep callus bidentate at the apex. The leaves are described as being "quite blunt, and broad at the apex, light green on both sides, slightly silvered on the upper surface;" flowers set closely, pure white; petals very broadly spathulate shortly stalked; lip with four or five streaks of bright maroon on each side of the callus, and a triangular blotch of the same colour in front of it; side laciniae with a very short stalk.—*Native country not stated*.

FIG.—*The Garden*, 1889, xxxv. p. 362, t. 697.

P. GRANDIFLORA, *Lindl.*—A truly handsome and noble Orchid, second to none of which we as yet possess any precise knowledge. In its general character it is similar to *P. amabilis*. The plant is bulbous, but the leaves are longer, and of a lighter green than in *P. amabilis*, distichous, oblong apiculate, and very thick; the flower scapes spring from the sides of the leaf tufts in the same way as in *P. amabilis*. The chief difference between the two, besides that of the length of the leaves, is that *P. grandiflora* has considerably larger flowers, with the front edge of the side lobes of the lip yellow instead of rose-colour, the cirrhi at the tip of the linear hastate middle lobe being also yellow, not white; the flower stems are tinted with purple. This makes a fine plant for exhibition. It blooms at different times of the year, and lasts long in beauty.—*Java; Borneo*.

FIG.—*Bot. Mag.*, t. 5184; *Gard. Chron.*, 1848, p. 39, with fig.; *Batcm. Second Cent. Orch. Pl.*, t. 114; *L'Hort. Franç.*, 1860, t. 19; *Puydt. Les Orch.*, t. 34; *Gard. Chron.*, N.S., 1886, xxvi. p. 213, f. 43a; *Orchid Album*, vi. t. 277.

SYN.—*P. amabilis* (Blume—*sic* Rchb.)

P. GRANDIFLORA AUREA, *Hort.*—This is certainly the grandest of the many varieties of this noble Orchid. It is a compact-growing plant, with distichous tufts of leathery oblong leaves of a light green colour, and very large flowers, which have the sepals and petals unusually broad and rounded, and of the normal opaque or ivory white, the lip being conspicuously marked with deep orange over its whole anterior portion, the front sides of the lateral lobes and the terminal cirrhi being more deeply coloured than the other parts. The variety is distinguishable by its yellowish-green flower stems, which are developed at different times of the year.—*Borneo; Tameken Islands*.

FIG.—*Warner, Sel. Orch. Pl.* ii. t. 7; *Reichenbachia*, i. t. 11.

P. HARRIETTAE, Rolfe.—A lovely hybrid, between *P. grandiflora* and *P. violacea*, raised by Mr. Seden. The flowers are intermediate between those of the two parents, and measure $2\frac{3}{4}$ inches across; the sepals and petals pale sulphur-white, densely dotted and splashed with rose-purple at the base; lip distinctly stalked; lateral lobes narrow, somewhat crescent-shaped, rosy-purple on the upper two-thirds, lower part yellowish spotted with brown and purple; mid-lobe bidentate, rosy-purple in front, white behind. It has been dedicated to the daughter of E. Corning, Esq., of Albany, U.S.A.—*Garden hybrid*.

FIG.—*Journ. of Hort.*, 1887, xiv. p. 531, f. 88; *Gard. Chron.*, 3rd ser., 1887, ii. p. 9, f. 1; *L'Orchidophile*, 1887, p. 247 (woodcut); *Id.*, 1888, p. 208 (woodcut); *The Garden*, 1890, xxxviii. p. 156, t. 766; *Vitch's Man. Orch. Pl.*, p. 49.

P. INTERMEDIA, Lindl.—A very pretty species, undoubtedly a natural hybrid between *P. amabilis* and *P. rosea*, the same result having been obtained by artificial crossing of these two species. Its general habit resembles that of other kinds of *Phalaenopsids*. The leaves agree with those of *P. amabilis*, and are pale green in colour; the flowers, which grow on a deep brownish-purple scape, are medium-sized, the sepals oblong acute, concave, white, the petals much larger, lozenge-shaped, pure white, with a few minute rosy speckles at the base; and the lip three-lobed, the lateral lobes erect, wedge-shaped, with blunt angles, violet with a few crimson spots, the middle lobe ovate, deep crimson, with the point separated into two short tendrils, as in *P. amabilis*; the crest of the disk is nearly square, deep yellow with crimson dots. This beautiful plant is very rare.—*Philippine Islands; Manilla*.

FIG.—*Paxton, Fl. Gard.*, iii. p. 163, f. 310; *Lem. Jard. Fl.*, iv. p. 44; *Vitch's Man. Orch. Pl.*, vii. p. 45.

SYN.—*P. Lobbii*.

P. INTERMEDIA BRYMERIANA, Rehb. f.—A distinct and very beautiful variety, named in honour of W. E. Brymer, Esq., Ilslington House, Dorchester. In habit of growth it is similar to *P. intermedia*. The leaves are about 9 inches long, and slightly speckled; the flowers have the sepals and petals white, the lateral sepals spotted with purple at the base, the petals richly suffused with rosy-lilac, and the lip a pale amethyst colour, the lateral parts white edged and spotted with magenta.—*Philippine Islands*.

FIG.—*Floral Mag.*, 2nd ser., t. 263; *Orchid Album*, ix. t. 416.

SYN.—*P. Brymeriana*.

P. INTERMEDIA PORTEI, Rehb. f.—This beautiful plant, which is very rare, is not unlikely to be a natural hybrid, and if so we should guess it to be a cross between *P. rosea* and *P. amabilis*; let it, however, be hybrid or species, it ranks among the very handsomest of its class. In general habit it resembles *P. grandiflora*, the leaves being broad oblong acute, about a foot in length, the upper side dark green, the under side dark purplish, more in the way of *P. amabilis*; the spikes are arched and branched, supporting the numerous large flowers; in one form the oblong sepals and rhomboid petals are white, suffused with light rose at the base, the lip rich dark purplish-rose, with the lateral lobes bluntly wedge-shaped, rosy, the base of the front lobe tinted with

orange-yellow, and the disk and callus yellow, the latter marked with deep purple spots. The flowers are of good substance, and remain in perfection a



PHALAENOPSIS INTERMEDIA PORTEI.

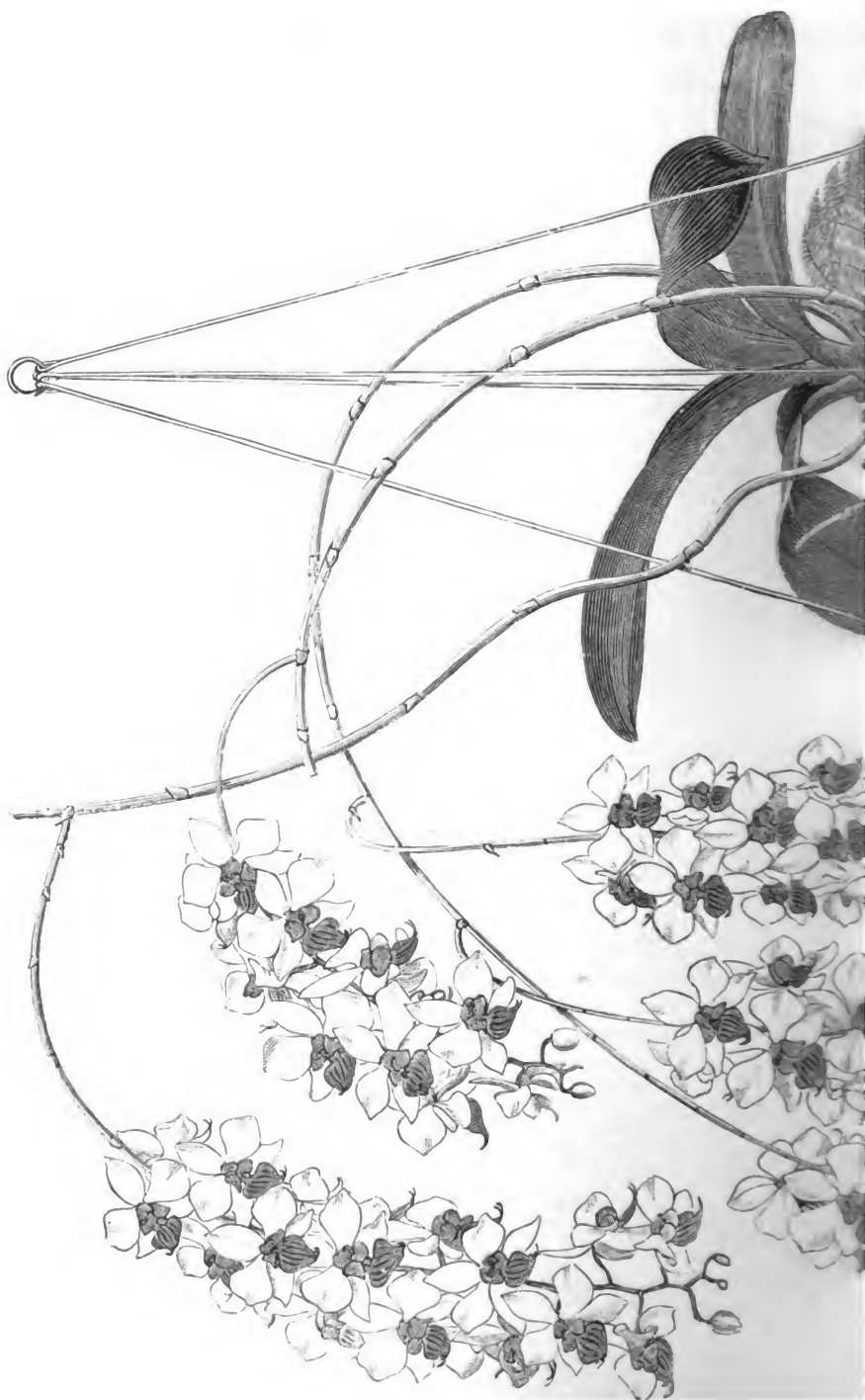
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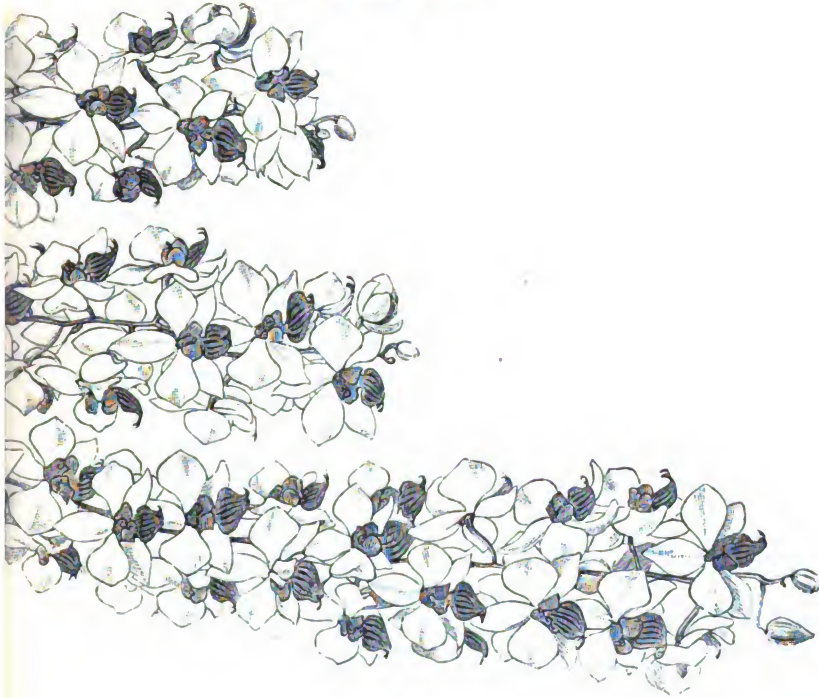
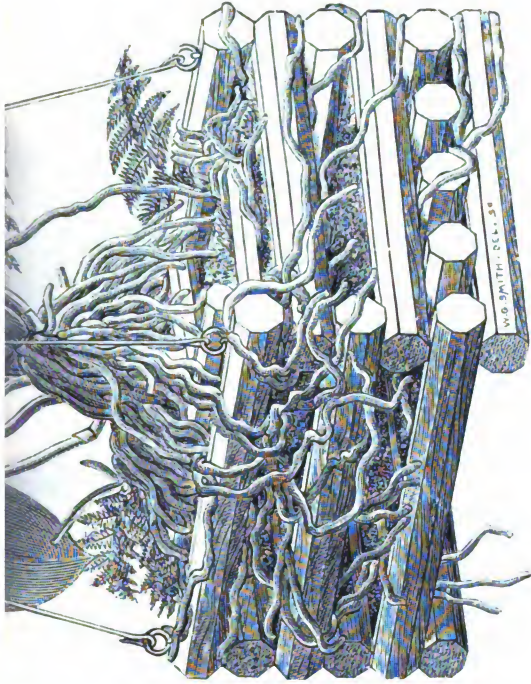
very long time. This species was introduced and first flowered many years ago by R. Warner, Esq.—*Philippine Islands*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 2; *Floral Mag.*, 2nd ser., t. 162; *Gard. Chron.*, N.S., v. p. 369, f. 71 (specimen plant), f. 72 (flower); *Reichenbachia*, 2nd ser., ii. t. 63 (lower figure).

P. "JOHN SEDEN," Rolfe.—Of all the hybrid *Phalaenopsis* raised by Mr. Seden this is undoubtedly one of the finest, and has deservedly been dedicated to its raiser. It is the result of a cross between *P. Lüddemanniana* and *P. grandiflora*. The flowers measure 3 inches across; sepals ovate-lanceolate, the lateral ones oblique; petals much broader, obovate; sepals, petals, and lip ivory-white, covered over the whole surface with minute dots of purple; lip three-lobed, lateral lobes fleshy; mid-lobe diamond-shaped, the upturned apex provided with two awl-shaped tendrils; ground colour of lip pale rose densely dotted with purple.—*Garden hybrid*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iii. p. 332, f. 50; *Vitch's Man. Orch. Pl.*, vii. p. 50.





PHALAEOPSIS INTERMEDIA PORTEI.
 (From the *Gardener's Chronicle*.)

P. LEUCORRHODA, *Rehb. f.*—This handsome and distinct *Phalaenopsis* is supposed to be a natural hybrid between *P. Schilleriana* and *P. amabilis*. The roots are flat; the leaves, which in some forms are green, are usually mottled, but the spots are not so distinct as in *P. Schilleriana*; and the flowers are as large as in an average form of that species; the sepals and petals are white, the lateral sepals spotted with purple inside at the base, and the petals tinged towards the base with rose; the lateral lobes of the lip, which are large and rounded, are conspicuously striolate with purple at the base, the saddle-shaped callus is orange with dark purple spots, and the disk yellowish. It blooms in the winter season.—*Philippine Islands*.

FIG.—*Floral Mag.*, 2nd ser., t. 166.

P. LOBBII.—See *P. INTERMEDIA*.

P. LOWII, *Rehb. f.*—This charming species forms a tuft of few oblong acute fleshy bright green leaves, from the base of which very stout fibrous roots are produced, as well as the lateral slender four- or five-flowered purplish scape; the flowers are very distinct in character, about $1\frac{1}{2}$ inch across, with ovate acute dorsal and oblong lateral sepals, broad roundish cuneate petals, and a small three-lobed lip about as long as the lateral sepals, the side lobes of which are linear and reflexed, and the intermediate one oblong ascending, rich violet-purple, the bases of the white sepals and petals flushed with pale purple, as are the lateral lobes of the lip, and the long proboscis-like rostellum or tip of the column; the large rounded petals give a fulness to the flower which adds greatly to its beauty; though a small plant it produces a good spike of flowers. It is not so robust in growth as many species, and requires to be kept near the glass so that it may get an abundance of light. In its natural habitat it grows on bare rocks exposed to the full influence of the sun, where in the rainy or growing season it is perfectly deluged with water, and in the resting season it loses its leaves. Under cultivation it requires great attention during this time, or it will entirely perish. It blooms in the summer months. "This plant loses all its leaves in its native habitat directly after flowering. It grows on limestone rocks, and on the branches of small bushes growing in the crevices of the rocks. The ranges of limestone hills on which it is found, rise suddenly out of the delta of the rivers Gyne, Ataran, and Salween, Tennasserim, Burmah. The country surrounding these hills is under water the greater part of the year, and the rainfall is excessive. The roots cease to grow, but are kept plump by the heavy dews which fall at night. The resting season is short, as showers fall in March, when the plant at once begins to put forth fresh leaves" (Major General Berkeley, in *Gardeners' Chronicle*, 1887).—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5351; *Batem. Second Cent. Orch. Pl.*, t. 168; *Warner, Sel. Orch. Pl.*, ii. t. 15; *Xenia Orchidacea*, ii. t. 151; *Gard. Chron.*, 3rd ser., 1887, ii. p. 745, f. 146; *Lindenia*, vi. t. 272; *Veitch's Man. Orch. Pl.*, vii. p. 29.

SYN.—*P. proboscidioides*.

P. LÜDDEMANNIANA, *Rehb. f.*—A very pretty dwarf species allied to *P. sumatrana*. The plant is very similar to *P. rosea* in general appearance. The leaves are thick in texture, ligulate-oblong acute shining, 6 to 8 inches in length, and the short flower stem is lateral and few-flowered; the flowers are entirely marked by parallel cross-bars of colour; both sepals and petals are

oblong acute, white, beautifully barred with amethyst in the lower half, and with cinnamon-brown in the upper half; the lip is three-lobed, the lateral lobes



PHALAENOPSIS LÜDDEMANNIANA.

ligulate bidentate, pale purplish, and the middle lobe oblong, of a rich deep violet. It flowers at different times of the year, and lasts in bloom for two months. This species produces young plants on the flower spikes more freely than any other kind.—*Philippine Islands*.

FIG.—*Bot. Mag.*, t. 5523; *Batem. Second Cent. Orch. Pl.*, t. 133; *Florist and Pomologist*, 1865, p. 257, t. 254; *Flore des Serres*, t. 1636; *Rev. Hort.*, 1872, p. 390, with tab.; *Lindenia*, ii. t. 94; *Id.*, viii. t. 366; *Veitch's Man. Orch. Pl.*, vii. p. 30.

P. LÜDDEMANNIANA
OCHRACEA, Curriers.—In this

variety the flowers have the sepals and petals of a pale

yellowish-rose barred with pale brown, thus forming a distinct and pretty companion to the original brighter-coloured *P. Lüddemanniana*.—*Philippine Islands*.

FIG.—*Rev. Hort.*, 1872, p. 390, with tab.

P. MANNII, Rehb. f.—A very pretty species, rather near to *P. cornu-cervi*, with oblong-ligulate acute leaves, a span to a foot long, green, with a violet edge and many violet spots near the base; the flowers are numerous (thirteen or more), in deflexed racemes, with the stalks scarcely winged; they are about 2 inches in diameter, the oblong-ligulate sepals, and smaller linear-falcate petals honey yellow, conspicuously blotched and spotted with rich brown; the lip is very singular, the lateral lobes being erect ligulate retuse, whitish streaked with purple, and the whitish central lobe crescent-shaped and fringed.—*Assam*.

P. MARIAE, Burbidge.—This elegant dwarf-habited species resembles *P. sumatrana* in its manner of growth, and its flowers are also similar in form to those of that plant. The leaves are deflexed, distichous, ligulate acute, glossy, and obscurely striate; the flowers grow in a lateral drooping raceme, and are about 1½ inch across; the oblong bluntish sepals and the somewhat broader petals are white, each marked with about six bold transverse bars of chestnut-brown, the basal blotches being amethyst; the lip, which has the middle lobe obovate oblong apiculate, convex, and plane, not pilose, is



PHALAENOPSIS MANNII.

of a rich deep magenta-purple margined with white. It was discovered by Mr. F. W. Burbidge when collecting for Messrs. Veitch & Sons.—*Sunda Isles*.

FIG.—*Orchid Album*, ii. t. 80; *Bot. Mag.*, t. 6964; *Journ. of Hort.*, 1839, xviii. p. 213, f. 32.

P. PARISHII, *Rchb. f.*—A “lovely little plant,” with thick fleshy roots, distichous tufts of oblong-lanceolate acute deep green leathery leaves from 2 to 4 inches long, and short six- to ten-flowered racemes, the flowers actually small, being less than 1 inch in diameter, but comparatively large and effective for the size of the plants, from their being numerous with the parts well spread out; the sepals are oblong or ovate, the petals obovate spathulate, both white, and the lip has the lateral lobes small, horn-like, yellow with purple blotches, and the front lobe broadly triangular, spread out, and of a rich deep amethyst-purple; the disk has a semi-lunar callus, the edge of which is broken up into a fimbriate crest, and behind this is a projecting linear appendage divided into four slender filaments almost as long as the lobe itself. The strong contrast of colour in the rather crowded flowers renders the plant very beautiful when in blossom, which occurs during the summer season. “This plant, a native of Moulmein, loses its leaves, during the dry weather, in moist localities. If the rains set in late, before the leaves get a fair start, it is not unusual to see the plant in flower before the leaves develop. It is generally found on boughs of trees covered with moss, where it is subject to great heat and moisture during the growing season. In cultivation it will retain its leaves throughout the winter if the moss at the roots is kept slightly damp (not wet) during the resting season” (Major General E. S. Berkeley, in *Gardeners’ Chronicle*, 1887).—*Burmah; Eastern Himalaya*.

FIG.—*Bot. Mag.*, t. 5815; *Xenia Orch.*, ii. t. 156, f. 1; *Refug. Bot.*, ii. t. 85.

P. PROBOSCIDIODES.—See **P. LOWII**.

P. REGNIERIANA.—See **P. ESMERALDA**.

P. REICHENBACHIANA, *Rchb. f. et Sander*.—In growth this plant resembles *P. Lüddemanniana*. It is a distinct species, with leaves upwards of a foot long, and nearly 3 inches broad, strongly keeled, and a stout unbranched peduncle $1\frac{1}{2}$ foot long, bearing from one to two dozen flowers equal to those of a fine *P. sumatrana*; the sepals and petals are cream-coloured, irregularly blotched and barred with dull reddish-purple, the lip triangular dilated mauve-blue with the side lobes orange and white; the anterior disk bears a cushion of hairs.—*East Tropical Asia*.

P. ROSEA, *Lindl.*—A rather small-flowered but pretty species. The plant forms a tuft of leathery oblong convex or recurved leaves 6 to 8 inches long, and of a bright light green colour; the scape is lateral, about $1\frac{1}{2}$ foot in height, stiff and ascending, branched, with a drooping purplish panicle of some dozen or more flowers, which are an inch across; the sepals and petals are oblong-lanceolate, white, slightly tinged with rose-pink, especially along the centre; the lip with the front lobe ovate acuminate, ascending, deep violet in the centre, the side lobes linear-spathulate, oblique, incurved, stained in some varieties with rich orange, the crest concave, lunate, rounded. It blooms at different times of

the year, lasting long in beauty. It sometimes produces from twelve to fourteen spikes of bloom, and then makes a very handsome specimen. If the old spikes are left, they will keep blooming for several years, as in most other species of this genus, and as the spikes elongate the flowers come larger.—*Philippine Islands*.

FIG.—*Parton, Fl. Gard.*, ii. t. 72; *Lem. Jard. Fl.*, iii. t. 283; *Bot. Mag.*, t. 5212; *Jennings, Orch.*, t. 27; *Flore des Serres*, t. 1645; *Gard. Chron.*, 1848, p. 671, with fig.; *Orchid Album*, vi. t. 268.

SYN.—*P. equestris*; *Stauroglottis equestris*.

P. ROTHSCHILDIANA, *Rchb. f.*—A hybrid between *P. Schilleriana* and *P. amabilis*, the leaves having the shape and the variegation of *P. Schilleriana*. The petals are white, and the sepals are pale sulphur-yellow, the lateral ones being spotted with purple at the base; side-lobes of lip yellow spotted with purple; mid-lobe white, sparingly spotted with red at the base and faintly marbled with orange. Raised in the nurseries of Messrs. J. Veitch & Sons, and dedicated to Lord Rothschild.

FIG.—*Veitch's Man. Orch. Pl.*, vii. p. 51.

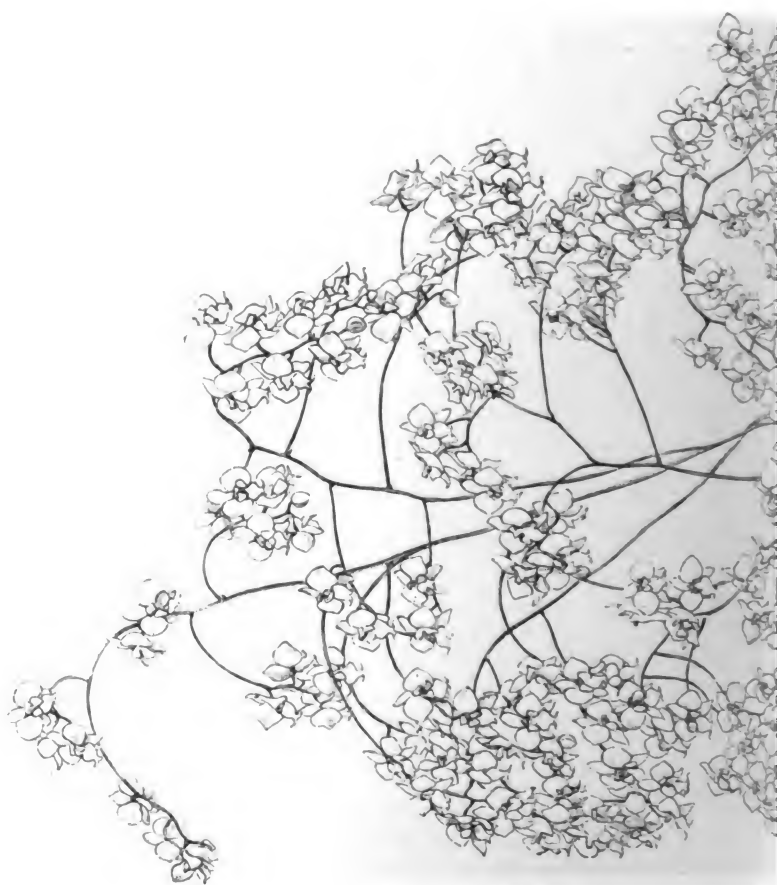
P. RUCKERIANA.—See *SARCOCHILUS UNGUICULATUS*.

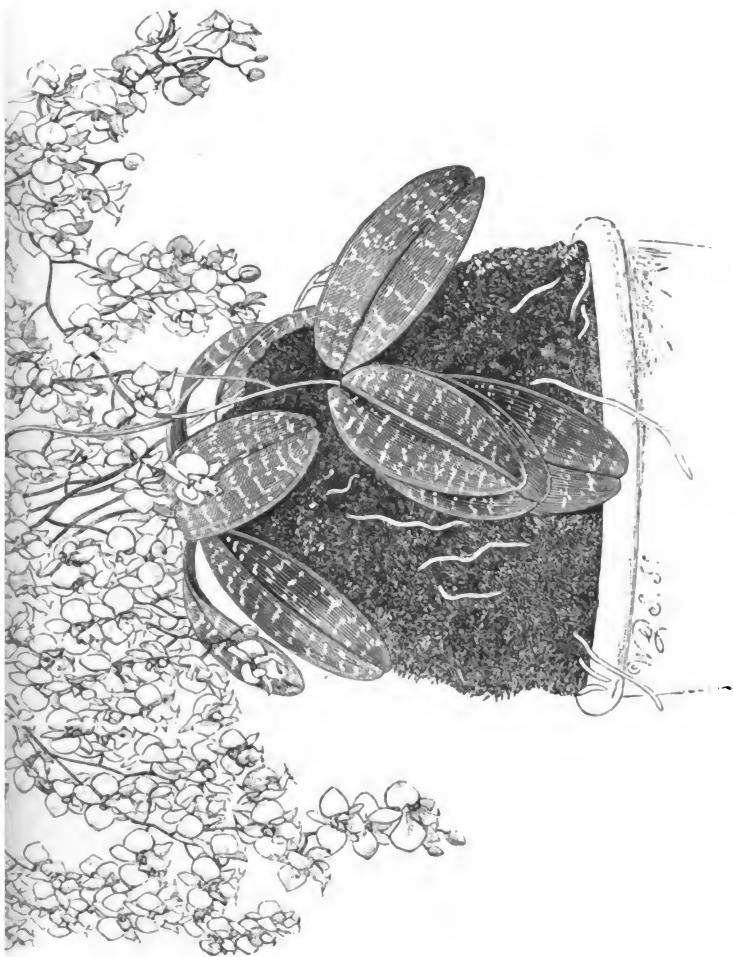
P. SANDERIANA, *Rchb. f.*—A most charming plant, which it is suggested may be a natural cross between *P. amabilis* and *P. Schilleriana*. Its general appearance is that of a rose-coloured form of *P. amabilis*; the foliage is similar to that of *P. amabilis*, but the upper surface is a dark silver-grey, similar in colour to the markings on the leaves of *P. Schilleriana*; the sepals, petals, and lip resemble those of *P. amabilis*, but are deeply flushed with a pleasing rose-colour, some being whitish-rose, some rose-purple, with well-defined areas of darker purple; the lip is white, marked with cinnamon or purple stripes, and some touches of yellow. The tendrils of the lip assume the anchor-like form seen in *P. Schilleriana*; the callus, which is peculiar, being horse-shoe shaped with one blunt angle outwards on each side, is white or whitish with brown or purple freckles. It flowers during the autumn months. In the var. **MARMORATA** the lateral sepals have numerous rows of small purple spots at the base, and the lip has three broad basal purple bars on the side lobes, and a middle lobe with purple dots in the central line and fine purple stains at the sides. There is a white form of this species called **ALBA**.—*Eastern Archipelago*.

FIG.—*Orchid Album*, v. t. 209; *Lindenia*, i. t. 23; *L'Orchidophile*, 1865, p. 18; *Reichenbachia*, 2nd ser., ii. t. 68 (upper figure).

P. SANDERIANA PUNCTATA, *O'Brien*.—A distinct variety, first flowered with Messrs. H. Low & Co., of Clapton. The sepals and petals are more tinged with lilac than those of the type; the lower portion of the lateral sepals is spotted similarly to *P. Stuartiana*, the side and front lobes of the lip are spotted with crimson. Mr. O'Brien suggests that it is probably a natural hybrid between *P. Schilleriana* and *P. amabilis*.—*Eastern Archipelago*.

P. SCHILLERIANA, *Rchb. f.*—A magnificent plant, undoubtedly one of the finest Orchids in cultivation, and quite dissimilar from all other kinds. The





PHALAENOPSIS SCHILLERIANA.
As flowered by Lady Ashburton, Melchet Court, Romsey.
(From the *Gardener's Chronicle*.)

roots of this plant are very distinct, being flat and rough, and, moreover, very free in growth; the leaves are oblong-obtuse, 6 to 18 inches long, beautifully variegated, being of a dark green colour, mottled with irregular bands or streaks of greyish-white on the upper side, the under surface purple; the scapes or peduncles are produced from the axils of the leaves, and in their native country are sometimes more than 3 feet long, and more branched than those of other kinds; the individual blossoms measure more than 3 inches across, and are arranged in two rows along the spike; the obovate sepals and larger rhomboid petals are of a beautiful light mauve, edged with white; the lip, which is three-lobed, with rounded lateral lobes, and an oval central one, split at the end into a pair of divergent curved horns, is of the same colour with darker spots, the disk bearing a four-cornered callus, which is yellow spotted with reddish-brown, and the middle part handsomely spotted—indeed the whole aspect of the plant is very attractive. The flowers, which are produced in summer, continue for several weeks in full perfection. There are many different varieties of this plant. Mr. Warner sent a specimen to the St. Petersburg Exhibition in 1869, which had one hundred and twenty expanded blooms upon it, and presented a most glorious spectacle. The accompanying illustration was taken from a plant which flowered in the garden of Lady Ashburton at Melchet Court; it was figured in the *Gardeners' Chronicle*, 1875, and we are indebted to the editors of that periodical for the use of the block. This plant bore three panicles of flowers bearing respectively 96, 108, and 174 blossoms, making a total of 378.—*Philippine Islands*.

FIG.—Warner, *Scl. Orch. Pl.*, i. t. 1; *Bot. Mag.*, t. 5530; *Xenia Orch.*, ii. t. 101; *Flore des Serres*, tt. 1559—60; *L'Ill. Hort.*, t. 348; *L'Hort. Franç.*, 1863, t. 11; *Journ. Soc. d'Hort. Par.*, 1862, t. 609; *Jennings, Orch.*, t. 15; *Batem. Second Orch. Pl.*, t. 171; *Gard. Chron.*, N.S., iv. p. 169, f. 34 (specimen plant); *Puydt, Les Orch.*, t. 35; Warner, *Scl. Orch. Pl.*, iii. t. 5 (*splendens*); *Floral Mag.*, 2nd ser., t. 257 (*delicata*); *L'Orchidophile*, 1884, p. 279 (plate); *Revue Hort.*, 1887, p. 396 (*splendens*); *Gard. Chron.*, 3rd ser., 1888, iii. p. 529, f. 72; *Lindenia*, v. t. 227; *Vitch's Man. Orch. Pl.*, vii. p. 37.

P. SCHILLERIANA PURPUREA, O'Brien.—A fine deep-coloured variety with bluish-purple flowers; the lower portions of the sepals and lip being spotted. First flowered with Messrs. Hugh Low & Co., of Clapton.

P. SCHILLERIANA VESTALIS, Rehb. f.—In this plant we have a white-flowered form of *P. Schilleriana*, which was first bloomed by Messrs. Low & Co., of Clapton.—*Philippine Islands*.

P. SPECIOSA, Rehb. f.—This handsome species, allied to *P. Luddemania* and *P. tetraspis*, was introduced by Major-General Berkeley. It has large yellowish-green cuneate-oblong obtusely-acute leaves, and racemes or panicles of elegant stellate flowers, which are very freely produced. The sepals and petals are whitish-rose outside with rows of purple blotches, purple inside with a few white bars at the base of the petals, the side lobes of the lip yellow, white at the top and base, the mid lobe white and rosy-purple, or wholly purple, with a tuft of hairs at the apex. This species seems to vary a good deal, some of the varieties having the blossoms much blotched and showing very little white. The flowers are also said to be very fragrant. "This plant does not grow in the mangrove swamps, but on large trees, fully exposed to the air;

this will probably account for it being more robust. It can in cultivation stand a great deal more light than *P. tetraspis*, probably as much as any of the other *Phalaenopsis*" (Major-General E. S. Berkeley, in *Gardeners' Chronicle*, 1887).—*Andaman Islands*.



PHALAENOPSIS SPECIOSA.

FIG.—*Orchid Album*, iv. t. 158; *Gard. Chron.*, N.S., 1882, xviii. p. 745, ff. 130—132; *Id.*, 1886, xxvi. p. 277, f. 56; *Reichenbachia*, ii. t. 51; *Lindenia*, vi. t. 288; *Veitch's Man. Orch. Pl.*, vii. p. 38.

P. SPECIOSA CHRISTIANA, *Rchb. f.*—

A very distinct and beautiful variety with broader sepals and petals than in the type; the latter are white and the former rose-madder.

FIG.—*Gard. Chron.*, N.S., 1886, xxvi. p. 277, f. 57.

P. SPECIOSA IMPERATRIX, *Rchb. f.*—This variety is said to have larger flowers than the type, of a deep rosy-purple colour.

P. STUARTIANA, *Rchb. f.*—A very distinct and strikingly beautiful species of *Phalaenopsis*, introduced by Messrs. Low & Co., of Clapton, and named in compliment to the late Mr. Stuart Low. In growth it resembles *P. Schilleriana*, as it does also in the shape of the flowers. The plant has flattened roots, and bears oblong acute leaves, which are marbled when young, but become almost green as they get older. The flowers are produced in large branching panicles, and are about 2 inches across, with the anchor-like tips of the lip, as seen in *P. Schilleriana*; the rhomboid petals and oblong upper sepal are pure white, the lateral sepals are white on the upper side, and very pale sulphur on the lower side, where they are thickly spotted with cinnamon-red, as is also the central part of the lip, which has white edges and white horns. It flowers in the winter months.—*Philippine Islands*.

FIG.—*Bot. Mag.*, t. 6622; *Gard. Chron.*, N.S., xvi. pp. 748, 753, f. 149; *Florist and Pom.*, 1882, p. 49, t. 559; *Orchid Album*, v. t. 237; *Reichenbachia*, i. t. 42; *Veitch's Man. Orch. Pl.*, vii. p. 39.

P. STUARTIANA BELLA, *Rchb. f.*—A distinct variety, having linear red marking on the side laciniae; lip large with large purplish-brown blotches on the mid-lacinia.

P. STUARTIANA HRUBYANA, *Rchb. f.*—A fine variety which has bloomed in the collection of Baron von Hruby, Peckau, Bohemia. The sepals and petals are purple at the back, with a broad white margin on the petals, and a narrow one on the upper sepal, the inner border of the lateral sepals being also white.

P. STUARTIANA NOBILIS, *Rchb. f.*—A superior variety of the type, resembling *P. Schilleriana* in the young growth, but assuming more the colour of *P. amabilis* as it gains age. The under side of the leaves of this variety and the flower scapes are of a deep reddish-purple; the flowers are larger in all their

parts than those of the type, and are marked with fewer and larger spots; the anterior lobe of the lip is rhombic, and the disk and callus are deep orange-yellow densely spotted with brownish-red.

FIG.—*Orchid Album*, i. t. 39; *L'Ill. Hort.*, 3rd ser., t. 540 (*Stuartiana*).

P. STUARTIANA PUNCTATISSIMA, *Rchb. f.*—This is a distinct and pleasing variety, in which the flowers in their general coloration are like those of the type, that is, the lower halves of the lateral sepals and the lip are heavily spotted with brownish-red, and the callus and lower parts of the side lobes of the lip are yellow also spotted with red, in addition to which the sepals and petals are everywhere ornamented by innumerable small mauve-red spots on the parts which are normally white. The plant figured as *P. Stuartiana punctulata* in the *Lindenia* (t. 8) appears to be the same form.

FIG.—*Lindenia*, i. t. 8 (*punctulata*).

P. SUMATRANA, *Korthals*.—A remarkable plant which flowered for the first time in this country with the late J. Day, Esq., in 1865. The leaves are few, obovate-oblong acute, 6 inches long, somewhat fleshy and of a bright green colour. The peduncles are axillary, spreading, five- to ten-flowered, the flowers about 2½ inches across, and rather more in depth; the oblong sepals and cuneate-oblong petals yellowish-white, transversely barred with rich reddish-brown; the lip narrow, three-lobed, its lateral lobes terminated behind in a curved tooth, yellow in front, and the middle lobe ligulate oblong, keeled, with four lines of violet-purple, two on each side the dense tuft of hairs which runs out to the apex; the anther-lid is fringed after the manner of *Trichopilia*. It requires the same treatment as the other species of *Phalaenopsis*.—*Sumatra: Palembang*.



PHALAENOPSIS SUMATRANA.

FIG.—*Bot. Mag.*, t. 5527; *Gard. Chron.*, 1865, p. 507, with fig.; *Flore des Serres*, t. 1644; *Batm. Second Cent. Orch. Pl.*, t. 146; *Sieb., Flore des Jard.*, 1861, t. 10; *Lindenia*, ii. t. 52.

SYN.—*P. zebrina*.

P. SUMATRANA KIMBALLIANA, *Rchb. f.*—A very fine and distinct variety, having broad sepals and petals which are yellow, transversely striped with red, lip ochre-colour, side laciniae orange, anterior portion of lip hairy. It is dedicated to W. J. Kimball, Esq., of Rochester, New York, one of the largest patrons of Orchids in America.

P. TETRASPIS, *Rchb. f.*—A chaste beautiful very free-flowering species, in growth resembling *P. sumatrana*, the stem bearing but few leaves. The leaves

are dark green, stout, cuneate-obovate oblong acute, and the flowers, which are said to have a fine perfume, are produced in rich drooping panicles, and have the general shape of those of *P. sumatrana*; they are ivory or waxy white, shining, with a trifid lip, of which the erect retuse side lobes have each a blotch in the centre, and the convex ligulate central lobe bears a large felt-like cushion. It flowers during the summer months. "This plant grows on mangrove and other trees, in very muddy swamps; it is never found growing under any other conditions; it is only found on trees at the extreme end of the creeks, where the water is sweet; the plant is found hanging from the branches a few feet above the water; here it grows with the most extraordinary luxuriance; it may be said to grow in a continual vapour bath, and as the swamps have a very obnoxious smell, it is no doubt supplied with many chemical compositions which enhance its growth" (Major-Gen. E. S. Berkeley, in *Gardeners' Chronicle*, 1887).—*India; Himalayas.*

FIG.—*Bot. Mag.*, t. 7321.

P. VALENTINI, *Rchb. f.*—This plant is probably a natural hybrid between *P. cornu-cervi* and *P. violacea*. The flowers are larger than those of the former species and smaller than those of the latter; the leaves are light green, narrower than in *P. violacea*, and without the wavy crispness usually seen in that species; the sepals and petals are cuneate-oblong, purple, the lateral sepals and petals white at the base inside and marked with purple bands; the lip is similar to that of *P. violacea*, the side lobes with a spreading angle at the upper corner, white with purple spots on the upper border, the front lobe pandurate, three-parted at the top, which is mauve, and bearing a thick umbo in the middle; the disk is yellow, as also is the column, the latter with red stripes at the top.—*Malay Archipelago.*

P. VEITCHIANA, *Rchb. f.*—This species is supposed to be a natural mule between *P. rosea* and *P. Schilleriana*. The leaves are cuneate oblong rather obtuse, faintly and obscurely tessellated; the flower scape is similar to *P. rosea* but longer, while the flowers are not so close together as in that species but more nearly resemble *P. Schilleriana*, only they are smaller, purplish, with whitish margins to the sepals and petals; the lip is three-parted, the lateral lobes large bluntly cuneate oblong, bright purple, with a triangular yellow brown-spotted callus between them, the anterior lobe oblong, narrowed and forcipate in front, the teeth being straight, not arched or tendril-like, and the colour a rich deep purple with a pale whitish or lilac margin.—*Philippine Islands.*

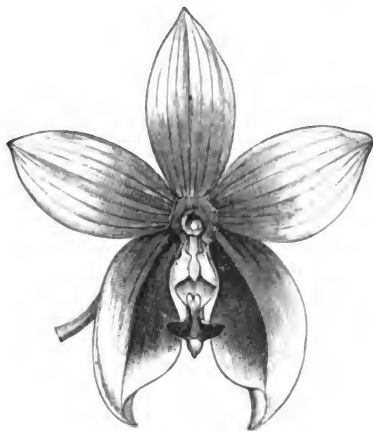
FIG.—*Floral Mag.*, 2nd ser., t. 213.

P. VEITCHIANA BRACHYODON, *Rchb. f.*—In this form the sepals and petals are pure white, the lateral sepals with brown spots at the inner and superior part of the base, and having a slight tinge of sulphur; the side lobes of the lip are purple at the top, white at the base, the anterior lobe is dark purple verging to brown, with some spots of the same colour on the whitish-ochre ground and margins; the apical teeth short so that the lip is rather retuse or bidentate than forcipate as in the type.—*Philippine Islands.*

P. VIOLACEA, *Teijsmann et Binnendijk.*—A distinct and richly coloured species, which has large broad bright green leaves, and very short peduncles,

on which, as far as we have seen, one or two flowers only open at a time. The flowers measure each about 2 inches in diameter; the lower portions of the sepals and petals and the lip are a rich rosy-purple with the upper portions yellow. The colouring is quite unique, and the flowers, which are deliciously scented, are produced during the summer months. There are several fine varieties distinguished by names.—*Malay Archipelago*.

FIG.—*Sieb., Flore des Jard.*, 1861, t. 9; *Orchid Album*, iv. t. 182; *Floral Mag.*, 2nd ser., t. 342; *Lindenia*, vii. t. 303; *Veitch's Man. Orch. Pl.*, vii. p. 42.



PHALAENOPSIS VIOLACEA.

P. VIOLACEA BOWRINGIANA, *Rehb. f.*
—A distinct variety, with flowers of a pure light yellow, having a very broad dash of purple inside each of the lateral sepals, and some fine bands and numerous freckles of the same colour at the bases of the petals and of the upper sepal.—*Malay Archipelago*.

P. VIOLACEA SCHRÖDERIANA, *Rehb. f.*—In this handsome variety the lower halves of the sepals and petals, instead of being wholly covered with rosy-purple, are marked with broken mauve-purple lines, at first sight reminding one of *P. Lüddemanniana*. It was named in honour of Baron Sir J. H. W. Schröder, The Dell, Staines.—*Malay Archipelago*.

FIG.—*L'Ill. Hort.*, xxxiii. t. 576.

P. ZEBRINA.—See *P. SUMATRANA*.

PHYSURUS, *Richard*.

(*Tribe Neottieae, subtribe Spirantheae*.)

A charming genus of dwarf variegated terrestrial Orchids, resembling *Anoectochilus* in their general habit, and like them producing beautiful foliage elegantly marked with metallic variegations. The flowers are small, sub-ringent, in erect spikes, and agree with those of *Anoectochilus* in having the lip spurred at the base, but differ in the intermediate portion being hollow and abruptly contracted, the limb being spreading or recurved. About twenty species from the warmer parts of Asia and America are known.

Culture.—This lovely group of plants requires the same kind of treatment as *Anoectochilus*. They grow to about the same size, and have a creeping stem, by means of which they are propagated. Many of them will do well grown without bell-glasses, provided they are in a

warm shady house—in fact, without shading the sun will soon destroy them ; they, moreover, require more moisture when grown without the glasses. For further particulars see *Anoectochilus*.

P. ARGENTEUS, *Loudon*.—A handsome distinct free-growing species, of decumbent habit, having pale green stems 4 or 5 inches in height, with cordate ovate leaves $2\frac{1}{2}$ inches long and $1\frac{1}{2}$ inch broad, the ground colour light green, with the numerous veins marked out by well-defined silvery lines. It does not require so much care as some others ; indeed, we have seen it grown in a warm house in a shady place, without a bell glass, with a good supply of water at the roots.—*Brazil*.

SYN.—*Anoectochilus argenteus*.

P. ARGENTEUS PICTUS.—See *P. PICTUS*.

P. FIMBRILLARIS, *Lindl.*—A very pretty species, which has ovate leaves exquisitely veined with silver, on a dark green ground, in the way of *P. argenteus* ; the flowers, however, which are white, have broader sepals, marked outside by a central line of pellucid glands, and the lip is more inflated, yellow at the tip, where it is also delicately fringed. It was introduced by Mr. Weir to the Horticultural Society's Garden at Chiswick, from the forests about Rio Janeiro, and is one of the choicest of the family.—*Brazil*.

P. MACULATUS, *Hook.*—This well-marked species has very stout vermicular roots, and upright stems about 6 inches high, furnished with lanceolate acuminate leaves $2\frac{1}{2}$ inches long, of a dark green colour on the upper surface, where they are marked with two rows of white oblong spots lying parallel with the mid-rib, the under surface pale green ; the flowers are small, yellowish, in short dense spikes just emerging from the uppermost leaves.—*Ecuador*.

FIG.—*Bot. Mag.*, t. 5305.

P. NOBILIS, *Rchb. f.*—A large and very beautifully marked species, resembling *P. pictus* in the rich variegation of its leaves, but quite different in the fringed lip of its densely spicate flowers ; the leaves are broadly oblong acute, of a dark green colour, prettily marked with silvery veins.—*Brazil*.

SYN.—*Anoectochilus nobilis*.

P. ORTGIESII, *Rchb. f.*—A very distinct and curious little species of dwarf habit, with prettily variegated leaves ; they are oblong-ovate with a cuneate base, dark olive-green with a velvet-like surface, silvery along the centre, and having scattered oblong blotches of metallic purple distributed over the entire surface of the leaf, so that it is said to be "mackerel-spotted" ; the flowers are white, in dense spikes.—*New Grenada*, at high elevations.

FIG.—*Florist and Pomologist*, 1872, p. 243, with fig.

SYN.—*Anoectochilus Ortgiesii*.

P. PICTUS, *Lindl.*—A beautiful and distinct species, growing 4 or 5 inches high, and having the ovate acute leaves 3 inches long and $1\frac{1}{2}$ inch broad, each leaf being edged with dark green curiously marked by silvery veins, and having a handsome silver-frosted band down the centre or disk ; the flowers are small and grow in short spikes ; white with a bar of blackish brown on each sepal and petal. It rivals the *Wana Rajah* (King of the Woods) of Ceylon in

the singular beauty of its foliage, and is a very free-growing plant, and one which may be cultivated without a bell-glass.—*Brazil*.

FIG.—*Refug. Bot.*, ii. t. 73 ; *Ann. de Gand*, 1845, t. 18.

SYN.—*P. argenteus pictus* ; *Anoetochilus argenteus pictus* ; *Anoetochilus pictus* ; *Microchilus pictus*.

P. QUERCETICOLA, *Lindl.* (?).—A distinct and free-growing species, inferior in beauty to the silvery reticulated kinds, but interesting from its dissimilarity. It grows from 3 to 4 inches high or more, and has ovate acute leaves 2 to 3 inches long, of a light green colour, with blotches of silvery grey on each side the mid-rib, appearing as if the intervening spaces and not the veins were silvered over ; the flowers grow in lax spikes, and the lip is three-toothed at the apex.—Said to come from *Jara*, but Lindley's plant is a native of *New Orleans*.

PILUMNA, Lindley.

(Tribe Vandeeae, subtribe Oncidieae.)

A small group of dwarf-growing epiphytes, closely allied to *Aspasia* and *Trichopilia*, with which latter some authorities unite them. They differ, however, not only in their aspect, but also in their sub-entire lip, which is adnate to the column and rolled round it at the base, and in the cucullate anther-bed being surrounded by membranaceous teeth. The few species are found in Central America, Mexico, Venezuela, and New Grenada.

Culture.—The species of *Pilumna* succeed well in the cool house, and are best grown in pots with rough peat, charcoal, and sphagnum moss ; they require good drainage, as an ample supply of moisture is requisite during the growing season, but during the resting period less should be given. In potting the plants should be well elevated above the pot rim. They are propagated in the usual way, by division.

P. FRAGRANS, *Lindl.*—This plant, which, as already noted, is very like *Trichopilia* in habit and appearance, has deliciously sweet-scented blossoms. The pseudobulbs are oblong, 4 to 6 inches long, slightly compressed, monophyllous, the leaves broadly oblong-lanceolate, and the flowers produced in pendent racemes of three or four together on radical peduncles ; the sepals and petals are oblong-lanceolate acuminate, pale yellowish-green, 2½ to 3 inches long, wavy and slightly twisted, and the lip, which is oblong, is apiculate and slightly three-lobed, pure white, with an orange spot towards the base. It blooms during the winter season.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 5035 ; *Batem. Second Cent. Orch. Pl.*, t. 164 ; *Jennings, Orch.*, t. 38 ; *Veitch's Man. Orch. Pl.*, ix. p. 180.

SYN.—*Trichopilia fragrans*.

P. FRAGRANS GRANDIFLORA.—See *P. NOBILIS*.

P. LAXA, *Lindl.*—In habit of growth this resembles *P. fragrans*, and is well worthy of cultivation on account of its delicious perfume ; the scapes are

pendulous racemose five- to nine-flowered; sepals and petals pale dull rose colour, tinged with green; lip white, three-lobed. It was introduced in 1841 from the neighbourhood of Popayan.—*U. S. of Colombia*.

FIG.—*Bot. Reg.*, 1846, t. 57.

SYN.—*Trichopilia laxa*.

P. LEHMANNI, *Regel.*—A plant collected by Herr Consul Lehmann in the Western Cordilleras of Colombia at an altitude of 7,000 feet. It is allied to *P. fragrans*, of which indeed it may possibly prove to be only a variety. Pseudobulbs ancipitous ovate monophyllous; flowers white, sepals and petals narrow linear-lanceolate; lip sub-quadrate with a bilobed apex, and a round orange stain at the base.—*U.S. of Colombia*.

FIG.—*Gartenflora*, 1890, t. 1276, f. 2.

SYN.—*Trichopilia Lehmanni*.

P. NOBILIS, *Rehb. f.*—This beautiful species is worthy of a place in every collection, and indeed should be grown in quantity by every one, so attractive



PILUMNA NOBILIS.

and useful are its fragrant flowers. The pseudobulbs are elongate oblong compressed, clustered, monophyllous, the leaves being broadly oblong acute; the flower scapes are radical, erect, bearing four or five deflexed blossoms, which are larger than those of *P. fragrans*, and are also sweet-scented; the white sepals and petals are linear-lanceolate undulated, and the lip is sub-quadrate, constricted near the top so as to appear obsoletely three-lobed, the upper lobes rounded and meeting over the throat, the front one much larger, retuse, $1\frac{1}{4}$ inch broad, pure snow white, having on each side of the throat an orange-coloured blotch, the two blotches meeting to form a central eye-like spot.—*U. S. of Colombia; Peru*.

FIG.—*Orchid Album*, iii. t. 128; *L'Ill. Hort.*, 3rd ser., t. 94; *Floral Mag.*, 2nd ser. t. 21 (as *fragrans*); *Lindenia*, ii. t. 59.

SYN.—*Pilumna fragrans grandiflora*; *Trichopilia fragrans nobilis*.

PLATANThERA, *Rich.*

(Tribe Ophreae, subtribe Gymnadenieae.)

This genus includes a large number of species of terrestrial deciduous Orchids, which are very closely allied to the genus *Habenaria*, from which

they differ in their remarkable broad anther, and in being destitute of the fleshy protuberances of the lip, which is a well-marked feature in that genus. The various species are mostly natives of the temperate regions of the world, but some few kinds are natives of the islands of Java and Ceylon.

Culture.—These are mostly hardy kinds, and we therefore refer our readers to the remarks upon *Orchis*, but the soil for *Platantheras* should consist of loam and peat mixed with some chalk. Although we have called these hardy Orchids, they require protection from severe frosts and heavy rains.

P. INCISA, *Lindl.*—An interesting and pretty herbaceous Orchid growing from 1 to 1½ foot high, with obtusely lanceolate stem-leaves deep green in colour, and oblong many-flowered terminal racemes with small thickly set handsome fragrant flowers of a rich purple, the lip being three-parted and deeply fringed.—*North America*.

PLATYCLINIS, *Benth.*

(*Tribe Epidendreae, subtribe Liparicæ.*)

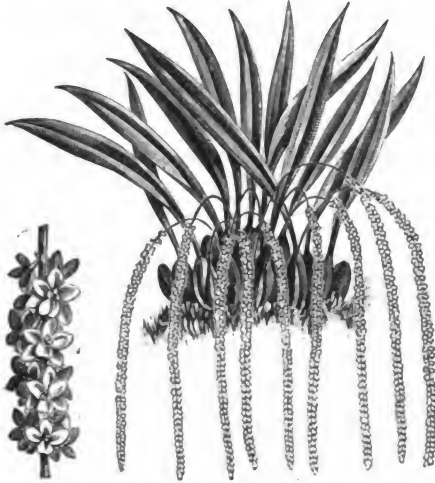
A small genus consisting of plants of graceful habit, forming the second section of Blume's genus *Dendrochilum*, and commonly known in gardens by the latter name. They ought to find a place in every collection. They are dwarf and compact in habit, and have small pseudobulbs and narrow evergreen leaves about 6 inches in length; their flower spikes, which are slender and pendulous, are produced from the top of the bulbs, from which they hang down, forming long elegant racemes. There are eight or ten species found in India and the Malay Archipelago.

Culture.—These plants should be grown in the East Indian or *Cuttleya* house, potted in peat and sphagnum, with good drainage. They like plenty of water during the growing season; but after they have finished their growth, should only be allowed a diminished quantity. They are propagated by dividing the pseudobulbs just as they begin to grow.

P. COBBIANA, *Hemsley*.—A curious and interesting species, with pseudobulbs and leaves resembling those of *P. latifolia*. The racemes of flowers are remarkably zig-zag, and the flowers themselves have light sulphur-coloured sepals and petals, a flabellate orange-coloured lip, with small bristle-like side-lobes, and a green column with the wings and hood white.—*Philippine Islands*.

SYN.—*Dendrochilum Cobbianum*.

P. FILIFORMIS, *Benth.*—A charming species, which grows about 6 inches high. The flowers, which are produced in June, July, and August, are of a yellowish-green hue, and are prized for their gracefully drooping habit and delicious perfume. When arrived at a good size, it makes a nice exhibition plant.—*Philippine Islands.*



PLATYCLINIS FILIFORMIS.

FIG.—*Gartenflora*, t. 604: *L'Ill. Hort.*, 3rd ser., t. 323 (*glumaceum* in text).

SYN.—*Dendrochilum filiforme*.

P. GLUMACEA, *Benth.*—One of the most elegant of Orchids, forming a pretty species, with small evergreen foliage, and producing graceful spikes of greenish-white flowers, which are delicately scented; it flowers in spring, and continues three or four weeks in perfection.—*Philippine Islands.*

FIG.—*Bot. Mag.*, t. 4853.

SYN.—*Dendrochilum glumaceum*.

P. UNCATA, *N. E. Brown.*—A very graceful plant, approaching *P. filiformis* in size and appearance, but the drooping floral racemes are shorter, the flowers larger, and of a pale green, and the sepals and petals acute. Introduced by Messrs. Low & Co.—*Malay Archipelago; Philippine Islands.*

SYN.—*Dendrochilum uncatum*.

PLEIONE, *Don.*

(Tribe Epidendraceae, subtribe Coelogyneae.)

A genus of pretty dwarf deciduous plants, with flask-like pseudobulbs, and light green membranous leaves which are produced after the decay of the flowers. Some authors regard them as forming a section only of the genus *Coelogyne* from which indeed they differ but slightly, except in habit, which is so peculiar, that it would seem to indicate they are entitled to generic rank. Thus every season, after finishing their growth, the leaves begin to die away, and during this, which is the proper time to rest them, they should have only just enough water to keep them from shrivelling. After they have enjoyed their due season of rest, the flowers will be produced; this occurs during the autumn and winter months, and immediately precedes the appearance of

the young growth, so that whenever the flowers are seen to be pushing up from the base of the pseudobulbs, water should be given in moderate quantities. The flowers are solitary, produced on sheathed peduncles, which spring from the root, and they have a fringed lip saccate at the base. These plants are frequently called Indian Crocuses, since they throw up their flowers in autumn and winter, much after the manner of our common *Crocus*, differing, however, considerably in shape, but like them very handsome and rich in colour. The few known species are nearly all natives of the Indian Alps.

Culture.—The *Pleiones* are far too little cared for by Orchid growers, many objecting to them on account of the leaves being absent at the time of flowering; but this is easily remedied by grouping them with Ferns, or other graceful green-leaved plants. They give little trouble, if properly managed, but their wants must be supplied at the right time, which is the great secret in the treatment of most deciduous plants. In consequence of their deciduous habit they get neglected, and just at the time when they should receive most attention, and their beauties should be seen, they are found in a shrivelled condition. They require a good season of growth, and after that, one of rest. The way in which we treat them is to pot them in a mixture of loam, peat, moss, and sand, giving them good drainage and plenty of water while growing; the potting should be performed immediately the flowers fade. After the pseudobulbs are fully formed, give only enough water to keep them from shrivelling; but, as before stated, when they begin to show flower, water freely, which will induce their blossoms to come finer. The *Cattleya* house is the most suitable place for them.

P. BIRMANICA, *Rchb. f.*—A charming dwarf Orchid, allied to *P. praecox*, but according to present experience a later-blooming plant. Its pseudobulbs have the peculiar raised shoulder and depressed conical apex frequent in this genus, and are of a fine bluish-purple marked with numerous white circles, the raised edge being much more prominent than in *P. praecox*; the leaves are of the usual character, and decay before the flowers are produced; these latter are of a light purple, the disk bearing three toothed keels, along which on a white ground are several small fine brown oblong or roundish spots or blotches; the anterior edge of the lip, instead of being fringed, has very short teeth; it is said to produce usually two-flowered peduncles.—*Burmah*.

SYN.—*Coclogyne birmanica*.

P. CONCOLOR, *Hort.*—A very pretty and distinct plant, with the pseudobulbs and foliage similar to those of *P. praecox*. The sepals and petals are of a

dark rose-colour, and the elegantly fringed lip is of the same colour with yellow blotches in which are several brownish-crimson spots; the crests are pale yellow.—*India*.

SYN.—*Coelogyne concolor*.

P. HOOKERIANA, *Moore*.—This species may be distinguished from all its congeners by the circumstance that it produces its leaves and flowers at the same time, which is unusual in the genus. The pseudobulbs are about 1 inch long, ovoid, smooth, not grooved or covered with a network; the stems grow some 3 to 5 inches high, each bearing one leaf and a solitary flower; the leaf is ovate-lanceolate acuminate and plicate, and the flower is expanded, about $2\frac{1}{2}$ inches across; the sepals and petals are elliptic lanceolate, bright rose colour, and the lip, which is convolute at the base, is white, having five or six pale brown purple spots on the anterior portion, the throat being pale yellow. Two forms of this species were discovered by Sir J. D. Hooker in the Himalayas at an altitude of 7,000 to 10,000 feet. It flowers in May.—*Sikkim Himalaya*.

FIG.—*Bot. Mag.*, t. 6388; *Lindenia*, viii. t. 363.

SYN.—*Coelogyne Hookeriana*.



PLEIONE HUMILIS.

P. HUMILIS, *Don*.—A dwarf species of great beauty, having dark green flask-shaped pseudobulbs clothed with fibrous scales, and crowned with a lanceolate acuminate dark green leaf; the peduncles grow up by the side of the pseudobulbs after the leaves have ripened off, and each bears a solitary flower 3 to 4 inches in diameter; the sepals and petals are linear-lanceolate, spreading, blush white, and the lip, which is convolute at the base, and emarginate and fimbriate in front, is also blush-white, traversed by six parallel fringed veins, with alternating stripes of rich purplish-crimson. It blooms in the winter season, and lasts in beauty for two or three weeks.—*N. Indian Alps*, elevation 7,000 to 8,000 feet.

FIG.—*Bot. Mag.*, t. 5674; *Parton, Fl. Gard.*, ii. t. 51; *Lem. Jard. Fl.*, t. 158; *Smith, Exot. Bot.*, t. 98; *Veitch's Man. Orch. Pl.*, vi. p. 55.

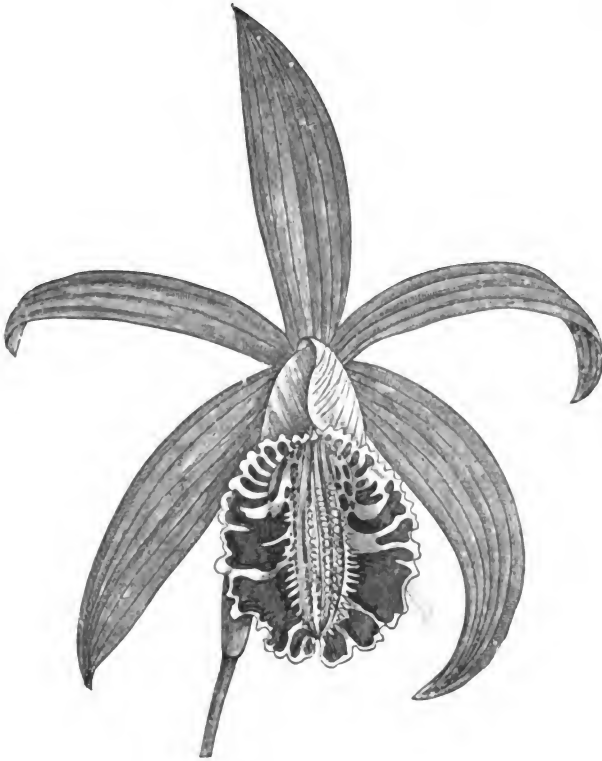
SYN.—*Coelogyne humilis*; *Epidendrum humile*.

P. HUMILIS ALBATA, *Rchb. f.*—A distinct and pretty variety, with snow-white sepals and petals, lip also white, but having light purple radiating lines; there is a conspicuous orange spot on each side of the anterior portion of the lip.

P. HUMILIS TRICOLOR, *Rchb. f.*—A pretty and distinct form, in which the sepals and petals are pale rose colour, and the large expanded frilled lip is pale yellow, distinctly streaked with brownish-yellow in the central part, the outer portions being margined with transverse blotches of the same colour. It flowers in January and February.—*Indian Alps*.

FIG.—*Orchid Album*, iii. t. 102.

P. LAGENARIA, *Lindl.*—A very handsome brilliantly coloured dwarf species, with clustered wrinkled broadly flask-shaped pseudobulbs, which are flattened



PLEIONE LAGENARIA.

below the conical neck, and are light green covered with brown spots, which give a netted appearance to the surface; these are surmounted by a solitary lanceolate leaf, which becomes matured and falls away before the flowers are developed; the flower scapes spring from the base of the pseudobulbs, and are about 3 inches high, bearing a solitary blossom 3 inches across; the sepals and petals are lanceolate, spreading, lilac-rose, and the lip is white or

whitish, convolute at the base, the large expanded front lobe emarginate, the central part yellow, traversed by five bearded ridges, and the broad margin much crisped, white with transverse bars and blotches of deep purple-crimson; the throat is yellow with a few crimson stripes. It flowers in January and February, when the other kinds are over, and continues a long time in perfection, if the blossoms are kept dry.—*Mountains of India.*

FIG.—*Bot. Mag.*, t. 5370; *Paxton, Fl. Gard.*, ii. t. 39, f. 2; *L'III. Hort.*, t. 510; *Flore des Serres*, t. 2386; *Lem. Jard. Fl.*, t. 93; *Jennings, Orch.*, t. 47, f. 1; *Warner, Sel. Orch. Pl.*, i. t. 17; *Puydt, Les Orch.*, t. 36; *Batem, Second Cent. Orch. Pl.*, t. 107; *Veitch's Man. Orch. Pl.*, vi. p. 56.

SYN.—*Coelogyne lagenaria*.

P. MACULATA, *Lindl.*—A beautiful dwarf Orchid, with roundish depressed pseudobulbs, tuberculate at the base, dark green, glossy, and bearing brown imbricating scales; the leaves, produced before the flowers, are lanceolate plicate, 6 inches long; and the flowers are solitary, 2 inches across, on short peduncles which spring from the base of the bulbs; the sepals and petals are narrow lanceolate, spreading, white, the lip also white, oblong, the basal part incurved, marked with oblique purple lines, the front lobe ovate, retuse, wavy, the disk yellow, with five elevated fringed veins having purple lines between, the margins wavy and boldly cross-barred with crimson-purple. It blooms in October and November, continuing three or four weeks in perfection.—*N. India; Khasia, Assam*, 4,000 to 5,000 feet.

FIG.—*Bot. Mag.*, t. 4691; *Wall. Pl. Asiat. Rar.*, i. t. 53; *Paxton, Fl. Gard.*, ii. t. 39, f. 1; *Flore des Serres*, t. 1470; *Lem. Jard. Fl.*, t. 93.

SYN.—*Coelogyne maculata*.

P. MACULATA ALBA.—See *P. MACULATA VIRGINEA*.

P. MACULATA ARTHURIANA, *Veitch*.—A very pretty variety, with lovely flowers, having one or two long and conspicuous lines of mauve on the petals, with a deep purple-mauve border to the anterior lobe of the lip.—*N. India.*

P. MACULATA VIRGINEA, *Rehb. f.*—This delightful little gem was sent to us by W. H. Scott, Esq., Nunfield, Dumfries, in November, 1887. The flowers are somewhat smaller than those of the type; sepals and petals rather narrow, white; lip white, stained with yellow on the basilar part; there are no purple spots or lines on the lip. Mr. Scott found this growing in a pan with the ordinary *P. maculata*; but this variety is constant, as it has also appeared in the collection of W. S. Kimball, Esq., of Rochester, New York, and was exhibited by G. W. Law-Schofield, of Rawtenstall, Manchester, before the Royal Horticultural Society in November, 1893, when it deservedly received an award of merit.—*N. India.*

SYN.—*P. maculata alba*.

P. PRAECOX, *Don*.—A most distinct and beautiful species, of dwarf habit like its congeners, with pale mottled brownish purple turbinate pseudobulbs, covered with a strong veining of loose network, and surmounted by a solitary broadly lanceolate membranaceous plaited leaf, which decays before the appearance of the scape; the latter springs from the side of the pseudobulb

and bears one showy flower, which is fully 3 inches across, and saccate at the base; the lanceolate sepals and the smaller petals are deep rose colour, and the lip, which is prominent and 2 inches long, is blush-white, the basal part connivent over the column, the front portion beautifully fringe-toothed, and the disk yellow furnished with five toothed keels or crests reaching nearly to the apex, and a few yellow and rose-coloured spots. It produces its blossoms in November and December.—*N. India*: Khasia at 4,700 feet, Nepaul at 7,500 feet, and Sikkim at 5,800 feet elevation.

FIG.—*Parton, Mag. Bot.*, xiv. p. 7, with tab.; *Bot. Mag.*, t. 4496 (as *Wallichii*); *Smith, Exot. Bot.*, t. 97; *Lem. Jard. Fl.*, t. 13; *Gartenflora*, t. 283 (as *Wallichiana*).

SYN.—*Coelogyne praecox*; *Epidendrum praecox*.

P. PRAECOX WALLICHIANA, *Lindl.*—A truly handsome dwarf plant, "quite a gem," with large turbinate dark green pseudobulbs, mottled with paler green warts and brown scales; they have been compared as to form and colour to a truffle; the leaves, which grow up with the bulbs, and ripen off before flowering time, are lance-shaped, and plaited; the plants produce their large solitary flowers on radical scapes in October and November, and last two weeks in beauty; the colour is a deep magenta-purple, the sepals and narrower petals lanceolate, and the lip of the same colour, decorated with a broad streak of yellow on its disk, and traversed by five parallel ridges of white tubercles, a few deep crimson stains appearing in the throat, and the apex being toothed and two-lobed. The blossoms are 3 or 4 inches across.—*India*: *Pundua, Khasia*.

FIG.—*Parton, Mag. Bot.*, vi. p. 25, with tab.; *Wall. Pl. Asiatic. Rar.*, i. t. 54; *Bot. Reg.*, 1840, t. 24; *Jennings, Orch.*, t. 47, f. 2.

SYN.—*Coelogyne Wallichiana*; *Pleione Wallichiana*.

P. REICHENBACHIANA, *Moore*.—A very beautiful and distinct species of this exceedingly handsome genus. The large pitcher-shaped pseudobulbs, which are constricted below the middle, are longitudinally six- to eight-lobed; the lobes, which form rounded prominences at the widest part, are of a very dark green reticulated with brown lines; and by their side appear the scapes, each bearing one or two large flowers, of which the narrow oblong sepals are rosy-lilac, with paler edges, the narrower petals are paler, with a bar of rosy-lilac down the centre, and the lip is white, the dilated front lobe ciliato-dentate, bifid, the disk bearing three keels which are crested with papillose teeth, short lines of rosy-crimson intervening between the veins in front, and a few spots of the same colour being scattered over the surface. This rare species ought to be in every collection.—*Moulmein*.

SYN.—*Coelogyne Reichenbachiana*.

P. SCHILLERIANA, *Rehb. f.*—A very pretty species, peculiar in the genus for producing its foliage and flowers simultaneously, in which respect it accords with the otherwise very distinct *P. Hookeriana*. In this plant the pseudobulbs are very small, obpyriform clustered, pale green and somewhat pitted; the short peduncles support a pair of lanceolate obscurely nervose leaves about 3 inches long, and a solitary flower, of which the dorsal sepal is oblong acute, quite erect, and $1\frac{1}{2}$ inch long, while the two lateral ones are considerably narrower, somewhat falcate, and directed downwards; the petals are very narrow linear, also directed downwards, all these parts being of a clear tawny-yellow; the lip is broad and

distinctly three-lobed, the lateral lobes semi-ovate, erect, whitish with a margin of deep orange-red, and the middle lobe is transversely oblong from a constricted base, somewhat convex and emarginate with a toothed border, tawny-yellow irregularly blotched and spotted with orange-red; the disk bears three elevated ridges or crests which are marked by several transverse orange-red lines; the sepals are represented as being green in the figure published in *Xenia Orchidacea*.—*Moulmein*.

FIG.—*Bot. Mag.*, t. 5072; *Flore des Serres*, t. 2302; *Xenia Orch.*, ii. t. 134, f. 1.

SYN.—*Coeloglyne Schilleriana*.

P. WALLICHIANA.—See *P. PRAECOX WALLICHIANA*.

PLEUROTHALLIS, *R. Brown.*

(Tribe Epidendreae, subtribe Pleurothallieae.)

This is a very large genus, containing some three hundred and fifty species, many of which are weedy plants, that will never become popular with any one, and although many species have from time to time been introduced to cultivation they are seldom preserved; but even from amongst so many kinds, there are few indeed worthy of notice. The genus is closely allied to *Masdevallia*. The species are widely distributed over South America, Mexico, and the West Indian Islands, chiefly confined to the mountain ranges, but some few kinds come low down, so that in the majority of cases they may be grown with the *Odontoglossums*, and like *Masdevallias*, the *Pleurothallis* have no decided period of rest; they are epiphytal plants, and if grown in the cool house, should be placed in shallow hanging pans, near the roof-glass as most of the kinds are dwarf in habit, some being minute plants.

Culture.—Same as *Masdevallia*, which see.

P. ATRO-PURPUREA.—See *MASDEVALLIA FENESTRATA*.

P. BARBERIANA, *Rehb. f.*—A minute little species, which is sometimes called the Gnat Orchid. It is a stemless plant, with very minute leaves; scape very slender, about 3 inches long, many-flowered, these are small spotted with deep purple; lip small deep purple. It blooms at various seasons.—*U. S. of Colombia*.

SYN.—*Masdevallia cultr.*

P. COCCINEA.—See *RODRIGUEZIA SECUNDA*.

P. GELIDA, *Lindl.*—This is a somewhat bold growing plant, attaining a foot in height, bearing stout, oblong leaves which are deep green, and it produces racemes of creamy-white, or greenish-white flowers, which remind one much of spikes of Lily of the Valley; it is a very pretty species. Flowers during the summer months.—*Jamaica*.

P. GLANDULIGERA, *Lindl.*—An elegant plant with small ovate fleshy leaves; scape very slender, 6 inches long, bearing about a dozen flowers, which are small pale yellow, streaked with green and reddish-purple. Flowers during the summer months.—*Brazil*.

P. GROBYI, *Lindl.*—This is a very pretty plant when in flower, leaves about 2 inches high, petiolate linear, oblong, obtuse; scape slender, erect, some 3 inches or more high, bearing a raceme of from six to twelve flowers, which are small, veined with crimson. It blooms at various seasons.—*Cuba*.

FIG.—*Bot. Reg.*, t. 1797; *Bot. Mag.*, t. 3682.

P. INSIGNIS, *Rolfe*.—A large flowering species, the flowers being $2\frac{1}{2}$ inches in length. In habit of growth the plant resembles a *Masdevallia*, forming a tuft about 6 inches high; flowers greenish-white; upper sepal having three purplish stripes; lower sepals with two stripes of purple near the margin; lip dark purple.—*New Grenada*.

FIG.—*Bot. Mag.*, t. 6936.

P. LAMPROPHYLLUM, *Rchb. f.*—A very interesting species, producing long erect many-flowered racemes from the top of the stems; the flowers are pale straw-yellow, deliciously scented, on which account alone it would be worthy of cultivation. A fine specimen of this is now in the collection of W. S. Kimball, Esq., of Rochester, New York.—*Tropical America*.

P. LEUCOPYRAMIS, *Rchb. f.*—A plant which rarely exceeds 6 inches in height; the leaves are lanceolate, fleshy, and deep green; scape erect, slender, bearing a raceme of many flowers, which are small and of the purest white. Flowers during the autumn months.—*Central America*.

FIG.—*Xenia Orch.*, iii. t. 210, ff. 1–9.

P. LONGISSIMA, *Lindl.*—Stem slender, bearing a single oblong leaf, which is some 5 inches long and 1 inch broad, thick and fleshy in texture and deep green; scape slender erect, upwards of a foot long, bearing a dense secund raceme of flowers, which are white tinged with yellow. Flowers in the spring months.—*West Indies*.

FIG.—*Hook. Exot. Fl.*, ii. t. 123; *Lodd. Bot. Cub.*, t. 949.

SYN.—*P. racemiflora*.

P. ORNATA, *Rchb. f.*—An exceedingly pretty little species, producing leaves about 1 inch long, the flowers being less than $\frac{1}{2}$ inch in diameter, pale purplish-brown; the margins of the sepals are densely fringed with comparatively large white cirrhi, which upon the slightest touch or breath of air are swayed to and fro. It flowered in the Royal Gardens at Kew, and in the Victoria and Paradise Nurseries.—*U. S. of Colombia*.

P. PICTA, *Lindl.*—This is a lovely little plant densely tufted, the leaves are petiolate, narrowly spatulate and deep green; scape very slender, erect, some 3 inches high, many flowered, laxly set, flowers small, yellow or white, with crimson lines. Blooms in the spring and summer months.—*De aerarij and Surinam*.

FIG.—*Bot. Reg.*, t. 1825; *Bot. Mag.*, t. 3897.

SYN.—*P. surinamensis*.

P. PROLIFERA, *Herbert*.—Stems short, slender, two-edged, bearing an ovate, cupped leaf, thick and fleshy in texture, deep green, becoming red when unduly exposed to the sun; scape short, about half as long as the leaf, sometimes bearing young plants instead of flowers; flowers small of a rich deep reddish-purple. Flowers during the summer months.—*Brazil*.

FIG.—*Bot. Reg.*, t. 1298 ; *Bot. Mag.*, t. 1908 ; *Lodd. Bot. Cab.*, t. 1903.

P. PUNCTULATA, *Rolfe*.—A distinct species, with light yellow flowers about an inch long, profusely spotted with brownish-purple, somewhat similar to a *Restrepia*.—*New Grenada*.

P. RACEMIFLORA.—See *P. LONGISSIMA*.

P. REYMONDII, *Rchb. f.*—This is a very singular species; having a creeping rhizome, and stout terete stems, about a foot in height, these are clothed with very pale sheaths, which are densely covered with short and stiff black hairs; leaves lanceolate acuminate, carinate behind, the edges reflexed, from 6 to 9 inches



PLEUROTHALLIS ROEZLII.

long, thick and fleshy in texture, deep green, and persistent; flowers solitary, small, green without, deep purple within. A superb flower for the microscope. Blooms during the spring months.—*Caraccas*.

FIG.—*Bot. Mag.*, t. 5385.

P. ROEZLII, *Rchb. f.*—This is one of the handsomest and largest flowered species of the genus. It is a dwarf-growing plant, producing erect racemes about 10 inches long of large flowers of a deep vinous purple; sepals oblong-ovate concave, keeled at the back, the lateral ones connate; petals smaller than the sepals. This beautiful species was discovered by Roezl, near Sonson.—*New Grenada*.

FIG.—*L'Orchidophile*, 1888, p. 80 ; *Orchid Album*, x. t. 476.

P. SURINAMENSIS.—See *P. PICTA*.

POLYCHILOS.—See PHALAENOPSIS CORNU-CERVI.

POLYCYCNIS, *Reichenbach fil.*

(Tribe Vandeae, subtribe Stanhopieae.)

This is a small genus of epiphytes, the species of which very much resemble those of *Cynoches* in their general appearance and the shape of

their flowers. They have short one-leaved pseudobulbous stems, with large plicately-venose leaves, and showy flowers on scapes which arise erect from the base of the stems, and terminate in loose or drooping racemes. The flowers have the sepals and petals narrow and free, and the lip of peculiar form, bi-auriculate at the base, the hypochil clawed with two large wings, the epichil arcuately patent, and the column slender and curved, dilated at the end around the minute stigmatic hollow. There are some two or three South American species.

Culture.—These plants are best grown in baskets, with peat and moss, and suspended from the roof. The *Cattleya* house will suit them best.

P. BARBATA, *Rchb. f.*—See *CYCNOCHES BARBATUM*.

P. GRATIOSA, *Endr. et Rchb. f.*—A very elegant species in the way of *P. lepida*, having the many-flowered racemes deflexed, not nutant, and a velvety rachis. It is, however, distinguished from *P. lepida* by the very short claw of the lip and by the anterior part of the same organ; there are two varieties as regards the size of the flowers, the finer one reaching that of *P. barbata*, the smaller one that of *P. lepida*; the sepals are ligulate acute somewhat bearded on the outside, the petals linear lanceolate very shortly clawed, and the lip has two oblong retuse auricles at the base, a rhomboid callus in the middle part, and the front part oblong narrowed to a ligulate apex. It is a very elegant species, one of the discoveries of the late Mr. Endres.—*Costa Rica*.

P. LEPIDA, *Linden et Rchb. f.*—A very pretty species, with ovoid clustered pseudobulbs about 2 inches in height, of a dark green colour, and stalked ovate plicately-veined leaves. The flower scapes proceed from the sides of the bulbs, and support a drooping raceme of from fifteen to twenty flowers, of which the lanceolate sepals and petals are pale yellow thickly dotted with purple so as to produce a pale brown or tawny hue, and the lip is pale yellow lightly spotted with chocolate-brown, white towards the base.—*U.S. of Colombia*.

FIG.—*L'III. Hort.*, 3rd ser., t. 19.

POLYSTACHYA, *Hooker*.

(*Tribe Vandeeae, subtribe Cymbidiaceae*.)

This is a genus of epiphytal plants, with pseudobulbous stems, few distichous leaves, and terminal racemes of rather small dull-coloured flowers, and hence it does not find much favour at the hands of Orchid growers. The species named below is, however, of ornamental character. There are about forty species described, mostly Tropical and South African, some from Tropical Asia (India and Malaya), and a few from Tropical America.

Culture.—The South African species, of which *P. pubescens* is an example, grow well in the cool house, potted in peat and moss, and like a good supply of water; indeed, they should never be allowed to get dry.

P. PUBESCENS, *Rehb. f.*—This beautiful dwarf-growing species, which attains about 6 inches in height, has for a long time been in cultivation in our gardens under the name of *Epiphora pubescens*. It has small pseudobulbs, producing two or three leaves, which are dull green, oblong-linear, plane, and slightly hairy beneath; the floral racemes are erect, short and many-flowered, the flowers being fragrant, of a rich bright golden yellow with a few purple lines. It is an abundant bloomer, and is quite an exception to the majority of the species in being very showy. Although introduced many years since, it is still very rare.—*Caffraria; Delagoa Bay.*

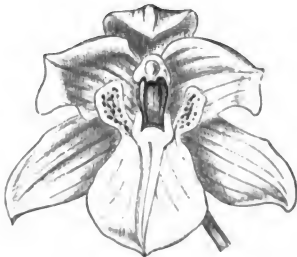
FIG.—*Lindenia*, iv. t. 170.

SYN.—*Epiphora pubescens*.

PROMENAEA, Lindley.

(Tribe Vandeae, subtribe Cyrtopodieae.)

This is a small genus of pretty dwarf epiphytes growing about 3 inches high. They are pseudobulbous, with terminal leaves, and produce their flower-scapes, which are drooping, from the base of the pseudobulbs, so that they hang over the edge of the pot. The flowers have spreading sepals, and a three-lobed lip crested in the middle. They are not showy plants, but very curious, and hence deserve to be in every collection. Some six or eight species, mostly Brazilian, are referred to the group, which is by some authorities retained as a section of *Zygopetalum*. The column often bears on its front a longitudinal elevated line or keel.



PROMENAEA CITRINA.

Culture.—The *Promenaeas* are best grown in pots with peat, the same treatment as that recommended for *Paphinia* being suitable for them.

P. CITRINA, *Don.*—A neat and pretty dwarf-growing epiphyte, with clustered small ovate tetragonal diphyllous pseudobulbs, oblong-ligulate pale green leaves, and deflexed scapes 2 to 3 inches long, bearing each a comparatively showy deep rich yellow flower with a dark crimson blotch at the base of the lip, which is obovate in the front part, with two oblong obtuse erect basal lobes which are spotted with crimson; they are produced at the end of the summer, lasting in beauty for several weeks.—*Brazil.*

FIG.—*Orchid Album*, i. t. 7; *Veitch's Man. Orch. Pl.*, ix. p. 64; *Reichenbachia*. 2nd ser., i. t. 11.

SYN.—*Maxillaria citrina; Zygopetalum citrinum.*

P. MICROPTERA, *Rehb. f.*—A distinct and pretty little species introduced by ourselves, and related to *P. xanthina*. The sepals and petals are creamy-white or light ochre-coloured, and the lip, which has the front lobe elongate and lance-shaped, and the two lateral lobes minute, is white, having three transverse bars of dull crimson on the disk, and small purple spots at the base. It flowers during the summer months.—*Brazil*.

SYN.—*Zygopetalum micropterum*.

P. ROLLISSONI, *Lindl.*—A curious little plant with roundish compressed pseudobulbs, bearing about two oblong-lanceolate venose leaves from the top and other accessory ones from the base. The deflexed scapes come from the axils of the latter, and bear one or two pale yellow flowers during the autumn months, lasting three weeks or more in beauty; the lip is whitish with the middle lobe oblong, apiculate, and the lateral lobes narrow ovate acute, like two erect ears standing up from the base, the whole being spotted with crimson.—*Brazil*.

FIG.—*Bot. Reg.*, 1838, t. 40; *L'Orchidophile*, 1881, p. 123.

SYN.—*Maxillaria Rollisoni*; *Zygopetalum Rollisoni*.

P. STAPELIOIDES, *Lindl.*—An interesting and pleasing species, remarkable for its singular speckled flowers, which have suggested the specific name. The pseudobulbs are small, ovate, tetragonal, one- or two-leaved, the leaves lanceolate, thin, light green, with a pale glaucous reticulation; the peduncle is deflexed, two-flowered, the sepals and petals roundish ovate, acute, spreading, greenish-yellow, transversely spotted and barred with dark purple; the lip deep purple approaching to black, oblong, three-lobed, the lateral lobes erect linear, the terminal one ovate oblong, cucullate at the base, the margins paler and cross-barred. It blooms in July, August, and September, and lasts long in perfection.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3877; *Bot. Reg.*, 1839, t. 17.

SYN.—*Maxillaria stapelioides*.

RENANTHERA, *Loureiro*.

(Tribe Vandeeae, subtribe Sarcantheeae.)

This genus, which is very nearly allied to *Vanda*, consists of showy plants, with climbing branching stems, clothed with distichous leaves, and bearing elegant panicles of flowers, which in some cases are of a very showy character, on lateral peduncles. They have spreading sepals and petals, the lateral sepals often broader and longer, contiguous or somewhat coherent, and a short lip articulated with the base of the column, and produced at the base into a conical spur. There are some half-dozen species found in Tropical Asia and the Malay Archipelago, some of which are in high favour with Orchid growers. *R. Lowii*, the *Vanda Lowii* of many gardens, is placed in *Arachnanthe* by Benth.

Culture.—The treatment recommended for *Vanda* as regards heat and moisture will also suit these plants. They require the temperature of the East Indian house, and should be potted in living sphagnum moss, with an abundance of drainage. They will do well on blocks if they obtain a good supply of water during the growing season. During winter give them only enough water to keep their stems and leaves from shrivelling. At all times they should be kept as much exposed to light as possible, and be shaded only sufficiently to keep them from the burning rays of the sun. They are propagated in the same way as *Aërides* and *Vanda*.

R. ARACHNITES.—See *ARACHNANTHE MOSCHIFERA*.

R. COCCINEA, *Loureiro*.—A somewhat scandent straggling plant, though when well managed a really superb and showy subject. The stems often attain



RENANTHERA COCCINEA.

as much as 12 feet or more in height, and are freely furnished with long fleshy clinging roots, and on either side with distichous linear-oblong emarginate leaves

about 5 inches long; the flowers are produced from the axils of the leaves, on long branching panicles; they each measure 2 inches in diameter, and have the dorsal sepal and petals narrow linear ligulate obtuse, deep red mottled with pale orange, and the lateral sepals broad oblong spathulate, crispy, and deep scarlet; the lip is small, the ligulate front and the quadrate side lobes being deep crimson, and the throat white. This plant requires to be so placed as to be freely exposed to sun-light, which is the only sure way of inducing it to bloom; it is indeed a shy bloomer, which doubtless accounts for its not being so generally cultivated as one might expect. By letting it grow up the roof, where it gets plenty of light and sun, it will, however, most likely flower when sufficiently strong for that purpose. We have seen it do well on a large block suspended from the roof, and thus grown we have known it to produce as many as five spikes at one time. When well bloomed it is quite worth all the care that is bestowed upon it, for it is really a superb plant. During the summer it should be treated to a liberal supply of heat and moisture, as from March to October is the time it is in vigorous growth. While resting in winter, let it have but little water—just enough to keep it from shrivelling. The most suitable material to pot it in is sphagnum moss, which, as before remarked, should be kept moist during the growing season. We have several times seen it blooming very freely in the large Palm House of His Grace the Duke of Devonshire, at Chatsworth, and have been informed by the late Mr. Speed, when gardener there, that it has a predilection for fixing its roots on birch poles. It blooms during the autumn.—*Cochin China*.

FIG.—*Bot. Mag.*, tt. 2997-8; *Bot. Reg.*, t. 1131; *Warner, Sel. Orch. Pl.*, ii. t. 37; *Purton, Mag. Bot.*, iv. p. 49. with tab.; *Puydt, Les Orch.*, t. 226, f. 229; *Hook. First Cent. Orch. Pl.*, t. 90; *Veitch's Man. Orch. Pl.*, vii. p. 83.

R. FLOS AËRIS.—See ARACHNANTHE MOSCHIFERA.

R. IMSCHOOTIANA, *Rolfe*.—We have not seen this new species, but it is described by Mr. Rolfe in the *Kew Bulletin* as being handsome, and allied to *R. coccinea* and *R. Storiei*, but having flowers simply racemose, and with various structural differences. The flowers are chiefly of a reddish-vermilion shade. It was sent to Kew by M. Van Imschoot, of Ghent, Belgium, in 1891.—*Cochin China*.

R. LOWII, *Rehb. f.*—This most remarkable and rare Orchid grows on high trees in the humid forests of Borneo. It is distinct in growth from any other species, and is readily known by its climbing stem an inch thick, which emits stout fleshy roots from the lower part, by its numerous obliquely obtuse strap-shaped leathery dark green leaves 2 to 3 feet long, and its remarkably long drooping slightly hairy flower spikes, which attain from 6 to 12 feet in length, and each bear from forty to fifty flowers. The most remarkable feature of the plant is the production of dimorphous flowers, that is, of two dissimilar forms of flower on the same spike. The two blossoms at the base of the spike, which are separated widely from the rest, are of a tawny-yellow, spotted with crimson, and have the sepals and petals lanceolate recurved and bluntish. The rest of the numerous flowers, which are 3 inches across, have lanceolate acute recurved wavy sepals and petals of a greenish-yellow, marked throughout by large irregular blotches, mostly transverse, of a rich dark-brown. It blooms during July, August, and September, continuing fresh for several

weeks, and produces its flowers when not more than from 2 to 3 feet high. The plant, which is evergreen, succeeds well along with *Vanda* and *Ærides*. This plant was formerly included in the genus *Vanda*, and, indeed, is to be found in many collections under the name of *Vanda Lowii*. Baron von Hruby, of Peckau, Austria, flowered in 1883 a large plant of this species which bore as many as twenty-two spikes of flowers, which is the greatest number we ever heard of. Mr. Bergman, gardener to Baron A. de Rothschild, at Ferrières, flowered in the same year a fine plant furnished with eleven spikes, which averaged about 9 feet in length.—*Borneo*.

FIG.—*Bot. Mag.*, t. 5475; *Batem. Second Orch. Pl.*, t. 161; *Warner, Sel. Orch. Pl.* ii. t. 4; *L'Il. Hort.*, t. 417; *Puydt, Les Orch.*, t. 46; *L'Orchidophile*, 1883, p. 701; *Id.*, 1884, p. 178; *Reichenbachia*, ii. t. 71; *Revue Hort. Belge*, 1890, p. 60, t. 6; *Vitch's Man. Orch. Pl.*, vii. pp. 9, 12.

SYN.—*Vanda Lowii*; *Arachnanthe Lowii*.

R. MATUTINA, *Lindl.*—A very old and rare species, of dwarf habit, flowering when not more than a foot in height; it has stoutish speckled stems, producing thick fleshy roots, and ligulate obtuse unequally bilobed distichous leaves; the flowers, which are distinctly set on the rachis, grow in axillary paniced racemes on purple scapes, and are about $2\frac{1}{2}$ inches in depth, with the dorsal sepal linear-ligulate acute, orange, the lateral ones parallel directed downwards, rather dilated near the base, orange with a few deeper orange spots; the petals are narrow linear acute, orange with smaller deep orange spots, and the lip is very minute, white with a red central spot. We saw a fine plant of this flowering in the collection of Baron A. de Rothschild, Ferrières, under the care of Mr. Bergman, the spike bearing twenty flowers. It blossoms in July and August. The plant figured under this name by Lindley in the *Botanical Register* (1843, t. 41) is *R. micrantha*; the flowers are small, but more numerous and more densely set than in *R. matutina* itself, and the colours are also brighter and more effective.—*Java*.

FIG.—*Pescatorea*, t. 12; *Blume, Tabell.*, xxiv; *Xenia Orch.*, i. t. 35, f. 1.

SYN.—*Ærides matutina*.

R. ROHANIANA, *Rchb. f.*—This plant is closely allied to *R. Lowii*, but differs in having shorter leaves, there appears to be also a difference in the keel of the lip, and it produces four basilar flowers instead of two as in *R. Lowii*. The ordinary flowers are $2\frac{1}{2}$ —3 inches in diameter, sepals and petals white, distinctly blotched with dark blood colour, the four lower ones having a ground colour of rich orange-yellow freely and thickly spotted with blackish-purple. It was dedicated by Reichenbach to Prince Camille de Rohan of Sichrow, in Bohemia, who flowered it for the first time in Europe in 1854. We recently saw this well flowered in the collection of M. le Duc de Massa, Chateau de Franconville, France. Flowers in September and October.—*Borneo*.

FIG.—*Revue Hort.*, 1879, p. 210 (plate); *Orchid Album*, x. t. 435.

SYN.—*Vanda Rohaniana*.

R. STORIEI, *Rchb. f.*—A handsome species, "just matching the celebrated *R. coccinea*, or rather surpassing it," for the parts of the flower, though one-sixth shorter than in that species, are much broader, and the lip much larger; the stem grows 10 or 12 feet in height, and has distichous somewhat fleshy, dark

green leaves 8 to 10 inches long, and a branching inflorescence bearing fifty to sixty flowers, the peduncles stronger than those of its ally, and very floriferous; the dorsal sepal and petals are dark orange, the lower sepals broad, and of a brilliant velvet-crimson shaded with lighter crimson, and the lip, which has the middle lobe ligulate and the side lobes triangular, is small, deep crimson, with yellow bars, and a white centre. There are a pair of quadrate lamellae in front of the mouth of the conical spur.—*Philippine Islands*.

RESTREPIA, *Humboldt, Bonpland, et Kunth.*

(Tribe Epidendreae, ~~subtribe~~ Pleurothallieae.)

A small genus of epiphytal Orchids, somewhat resembling *Pleurothallis*, and consisting of small-growing plants with slender tufted stems, each supporting a single leaf, and a solitary small flower of very singular structure. There are some twenty species described, all Tropical American, but very few of them are worthy the attention of Orchid amateurs, although, where the plants are grown for study or for scientific purposes, the smaller flowers displaying microscopic beauties are equally valuable with the larger flowers having showy colours.

Culture.—The *Restrepia*s succeed best in the cool house with *Odontoglossums*, and should be potted in a mixture of peat and sphagnum; a moderate supply of water all the year round will be found necessary for their well-being. They are increased by dividing the plants, taking care to have a leading growth or eye to each piece.

R. ANTENNIFERA, *Humb. Bonpl. et Kunth.*—This is a very elegant little plant, with short slender tufted stems, which support a single ovate-lanceolate leathery dark green leaf, and from amongst them other short slender stems which bear the exceedingly curious and handsome flowers, in which the sepals are very long, the upper one lanceolate, running out into a filiform apex more than 1 inch long, yellowish-white streaked with purple, the lateral ones directed downwards and connate into a broad lanceolate bipartite con-



RESTREPIA ANTENNIFERA.

spicuous segment, which is reddish crimson profusely dotted with blackish-purple; the petals are antennae-like, narrow, clubbed at the ends, and similar in colour to the dorsal sepal; the lip is small and of the same colour as the lateral sepals. It is well deserving a place in every collection for its extreme beauty, free-flowering properties, and curious structure. It blooms throughout the whole of the summer months.—*U. S. of Colombia*.

FIG.—*L'Ill. Hort.*, t. 601; *Humb. Bonpl. et Kunth, Nov. Gen. et Sp. Pl.*, i. t. 94; *Lindenia*, i. t. 36; *Vitch's Man. Orch. Pl.*, v. p. 11.

SYN.—*R. maculata*.

R. DAYANA.—See *MASDEVALLIA DAYANA*.

R. ELEGANS, *Kursten*.—A pretty little plant, which very much resembles the preceding in habit, but is dwarfer. The tufted stems bear broadly elliptic leathery leaves, and from their base the pretty flowers, which, though not so large as those of *R. antennifera*, are very curiously marked; the dorsal sepal is lanceolate, white streaked with purple, lengthened out into a yellow filiform tail, and the united lateral sepals are oblong emarginate, concave, yellow thickly marked with lines of small purple dots; the petals are small and resemble the dorsal sepal, and the small lip is panduriform emarginate, yellow, spotted and edged with red. It succeeds admirably in the cool house, with the treatment recommended above.—*U. S. of Colombia*; *Caracas*.

FIG.—*Bot. Mag.*, t. 5966; *Flore des Serres*, t. 743; *Kart., Auswahl neuer und Gen. Ven.*, t. 2.

SYN.—*R. punctulata*.

R. MACULATA.—See *R. ANTENNIFERA*.

R. PUNCTULATA.—See *R. ELEGANS*.

R. STRIATA, *Rolfe*.—A distinct and pretty species, of a densely tufted habit; the dorsal sepal is $1\frac{1}{4}$ inch long, maroon with a narrow line on each side of the midrib; lateral sepals united more than half their length, yellow, striped with maroon.—*New Grenada*.

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 275, f. 45; *Bot. Mag.*, t. 7233.

RODRIGUEZIA, *Ruiz et Pavon*.

(Tribe *Vandeae*, subtribe *Oncidiaceae*.)

This is a small group of Brazilian and Central American epiphytes, with which some authorities associate the *Burlingtonias*, another small group of interesting species already noticed at p. 134. The small flowers have the sepals and petals erect and sub-equal, the lip is clawed and entire, with a spur or gibbosity at the base, and the column is terete, bearded at the apex. The species are not generally very attractive, but that here described is well worth growing.

Culture.—This plant succeeds well on a block suspended from the roof, and should be grown in the *Cattleya* house.

R. DECORA.—See *BURLINGTONIA DECORA*.

R. FRAGRANS.—See *BURLINGTONIA FRAGRANS*.

R. LANCEOLATA.—See *R. SECUNDA*.

R. LEEANA.—See *BURLINGTONIA LEEANA*.

R. SECUNDA, *Humb. Bonpl. et Kunth*.—A neat and pretty epiphyte, with oval compressed pseudobulbs having a ridge on each face, and producing several linear-oblong coriaceous obliquely emarginate leaves, and axillary recurved scapes 6 to 9 inches long, bearing numerous small flowers, which all turn to one side of the spike, and are of a pretty deep rose colour, sparkling as if frosted. It blooms in October, and through the autumn and winter months. —*New Grenada; Trinidad*.

FIG.—*Bot. Mag.*, t. 3524; *Bot. Reg.*, t. 930; *Lodd. Bot. Cub.*, t. 676; *Humb. Bonpl. et Kunth, Nov. Gen. et Sp. Pl.*, i. t. 92; *Hook. Exot. Fl.*, t. 129; *Hook. First Cent. Orch. Pl.*, t. 76; *Orchid Album*, viii. t. 351.

SYN.—*Rodriguezia lanceolata*; *Pleurothallis coccinea*.

R. VENUSTA.—See *BURLINGTONIA VENUSTA*.

SACCOLABIUM, Blume.

(Tribe Vandeeae, subtribe Sarcantheae.)

This genus contains some of the finest Orchids in cultivation. They are evergreen plants, very compact in their growth, the stems furnished with long thick leathery or fleshy distichous pendent leaves, from the axils of which the flowers are produced, in long graceful simple or branched recurved racemes, which often measure from 1—2 feet in length. The flowers are not very large, but are exceedingly effective from the large number collected into the densely packed racemes. They have the sepals and petals much spread out, and the sessile lip spurred or saccate at the base. There are a score or more species described, natives of the Malay Archipelago and the hottest parts of India, where they are found growing on the branches of trees. The following selection will be found to comprise the best species of this beautiful genus, of which there are several others in cultivation, some of which are small-flowered, these latter being interesting to connoisseurs. Those we have named ought to be in every collection, however small, as they form very handsome objects even without flowers.

Culture.—In their habit of growth the species of *Saccolabium* are similar to those of *Aërides*, and they require the same degree of heat and the same general treatment, except that they are best grown in baskets

suspended near the roof, so that they may receive all the light possible and not too much shade—only enough to preserve their foliage from being scorched. The more light they receive, the more vigorous and better matured will be their growth, and this will lead to the production of finer floral racemes. They will also thrive in pots placed near the glass, and on blocks; but grown on this latter plan they require more water. They are propagated in the same way as the *Aerides*, and are liable to become infested by the same sorts of insects.

S. AMPULLACEUM, *Lindl.*—A distinct compact-habited and pretty Orchid, with an erect simple stem, 8 to 10 inches high, clothed with thick distichous ligulate channelled dark green leaves, about 3 or 4 inches in length, truncate and toothed at the end, and dense erect axillary oblong racemes of flowers



SACCOLABIUM AMPULLACEUM.

about 6 inches long, of a beautiful deep rose colour, produced in May and June. The sepals and petals are ovate, and the lip linear with a long compressed slender spur. This plant will succeed on a block, or in a basket with moss, and remains in beauty three weeks.—*India*: *Sylhet, Sikkim*.

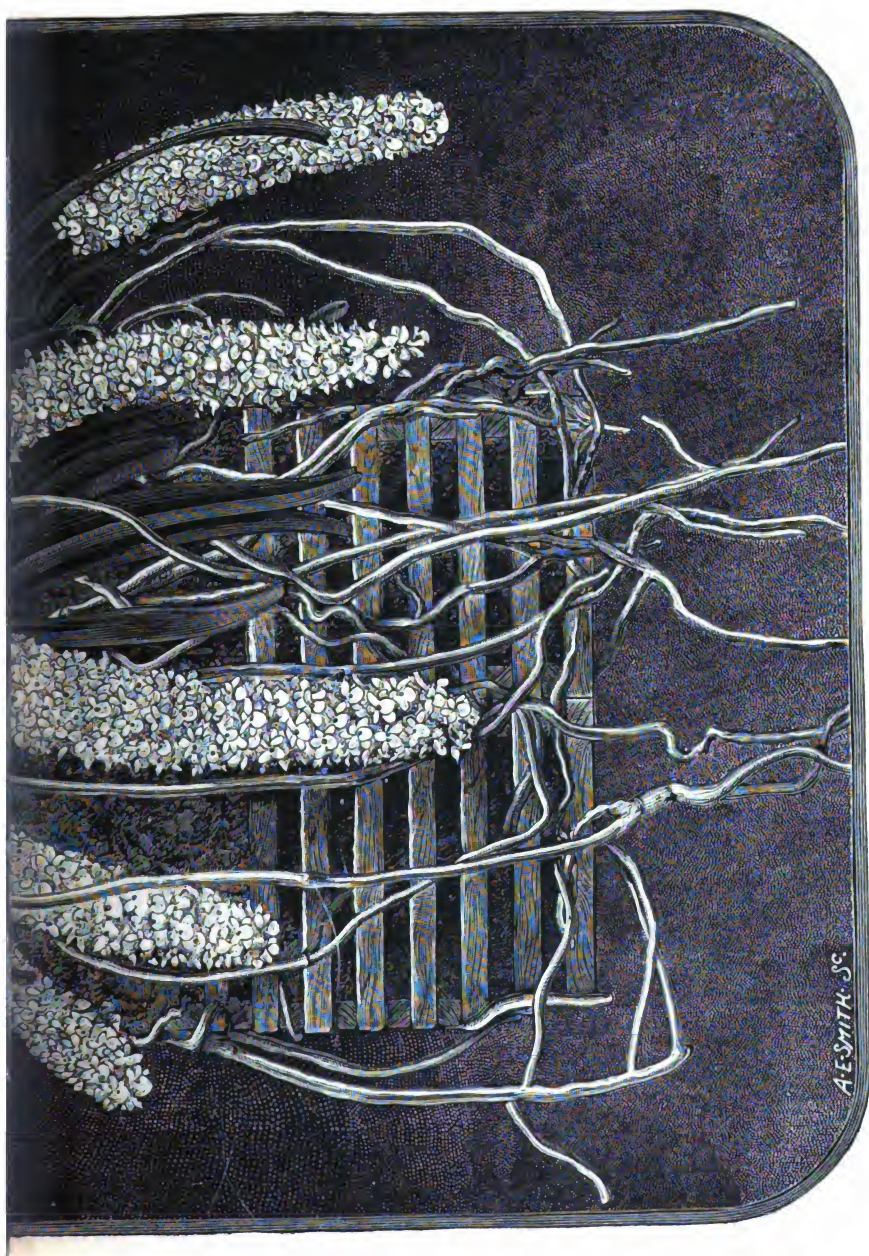
FIG.—*Bot. Mag.*, t. 5595; *Batem. Second Cent. Orch. Pl.*, t. 186; *Sertum Orch.*, t. 17; *Orchid Album*, iv. t. 191; *Paxton, Mag. Bot.*, xlii. p. 49, with tab.; *Wight., Icon. Pl. Ind.*, t. 1673; *Journ. of Hort.*, 1892, xxv. p. 117, f. 17.

SYN.—*S. rubrum*.

S. AMPULLACEUM MOULMEINENSE, *Hort.*—A superb variety of the preceding, than which it is somewhat more robust in growth; the leaves are spotted on both sides with dull brown, the flower spike is longer and denser, and the flowers are larger, of a uniform rich deep rose.—*Moulmein*.

FIG.—*Floral Mag.*, t. 393 (*roseum*).





SACCOLABIUM BLUMEL.
(From the *Gardeners' Chronicle*.)

S. BELLINUM, *Rchb. f.*—A very pretty dwarf species, in the way of *S. calceolare*, with short erect stems, clothed with evergreen distichous lorate obliquely bifid leaves, and decurved peduncles bearing a compact corymb of elegant flowers, which are considerably larger than those of *S. calceolare*. The oblong sepals and petals are straw-colour, blotched with large patches of dark brown, and the saccate lip is fleshy, white with mauve-purple spots, having on each side a large cushion of filiform processes, yellow in the centre, and there marked with spots of bright red. It flowers in February and March, lasting some time in beauty.—*Burmah*.

FIG.—*Orchid Album*, iv. t. 156; *The Garden*, 1889, xxxv. p. 434, t. 700; *Lindenia*, vii. t. 330; *Bot. Mag.*, t. 7142; *Veitch's Man. Orch. Pl.*, vii. p. 112.

S. BERKELEYI, *Rchb. f.*—A beautiful species of the *Rhynchosstylis* group, the leaves of which are praemorse, and the flowers large, loosely disposed on the raceme; they are white, striped and spotted with amethyst, the anterior blade of the lip, which is acute and not bilobed, amethyst.—*Andaman Islands* (?)

S. BIGIBBUM, *Rchb. f.*—This very pretty species is at present quite rare. It is a small close-growing plant, with very short stems, bearing persistent linear-oblong bifid bright green leaves, about 4 inches long, and short-stalked drooping sub-corymbose racemes, bearing about eight of its curious flowers, of which the spatulate sepals and petals are pale yellow, and the remarkable lip is triangular, white, with a very broad blunt spur, the centre yellow and the edge prettily frilled. It blooms about November.—*Rangoon*; *Arracan* (?)

FIG.—*Bot. Mag.*, t. 5767.

S. BLUMEI, *Lindl.*—A beautiful distinct species, with a short erect densely leafy stem, long arcuate distichous lorate persistent channelled leaves, unequally truncate at the ends, bright green, with a few parallel lines of dark green, extending from base to apex, on the under side. The flowers grow in dense pendulous cylindrical axillary racemes, the ovate sepals and oblong petals white, tinted with rose and dotted with magenta, and the lip with a compressed bluntish spur, and a roundish oblong lamina, ciliated, recurved, and emarginate at the tip, of a soft magenta rose. These flowers are produced in July and August, and last three weeks in perfection.—*India*; *Java*.

FIG.—*Sertum Orch.*, t. 47; *Wight., Icon. Pl. Ind.*, t. 1745 (*guttatum*—*f.* *Rchb.*); *Orchid Album*, iv. t. 169; *Puydt, Les Orch.*, t. 37; *Gard. Chron.*, N.S., xxiii. p. 573, fig. 105.

SYN.—*Saccolabium Rheedii*; *Rhynchosstylis retusa praemorsa*; *Aërides praemorsum*.

S. BLUMEI MAJUS, *Rchb. f.*—A charming variety of *S. Blumei*, in which the colours of the flowers are much the same as in the preceding plant, but the whole plant is of much stronger growth, and the flowers and flower spikes are much larger; the leaves are longitudinally banded with streaks of light and dark green on both surfaces.—*Moulmein*.

FIG.—*Pescatorea*, t. 21; *L'Ill. Hort.*, t. 545.

S. BLUMEI RUSSELLIANUM, *Williams.*—This is the very finest form of the *S. Blumei* section we have ever seen. The spike of flowers is very long and

massive, the blossoms are large, densely packed, and beautifully spotted. It bloomed in the collection of the late J. Russell, Esq., of Falkirk, under the skilful management of Mr. Sorley. We recently saw a well-flowered specimen of this variety in the collection of R. H. Measures, Esq., Streatham, with spikes 24 inches long. The flowers are produced in September.—*Java*.

FIG.—*Orchid Album*, v. t. 238.

S. CERINUM, *Rehb. f.*—This species was exhibited by Mr. James Bray, of Ghent, Belgium, at the Quinquennial Show, in April, 1888, when it attracted the general attention of Orchid growers. It has dark ligulate bilobed leaves, and orange-coloured flowers, waxy in texture, with an apricot-coloured spur.—*Malay Archipelago*.

S. COELESTE, *Rehb. f.*—The habit of this new and most distinct species is similar to that of *S. curvifolium*, with the inflorescence short, 3 to 4 inches long, and densely flowered. The blunt cuneate oblong sepals and petals are tipped with sky-blue, the compressed blunt recurved spur has a blue tint on both sides of its centre, and the rhombic anterior part of the lip is also sky-blue, while two falcate subulate bodies rise from the apex inside the spur. First flowered by Sir Trevor Lawrence, Bart.—*Siam*.

FIG.—*Orchid Album*, viii. t. 361; *Reichenbachia*, 2nd ser., i. t. 30; *Lindenia*, vii. t. 300; *Journ. of Hort.*, 1889, xviii. p. 197, f. 29; *Gardening World*, vii. p. 685; *Veitch's Man. Orch. Pl.*, vii. p. 54; *L'Orchidophile*, 1893, p. 17.

SYN.—*Rhynchostylis coelestis*.

S. CURVIFOLIUM, *Lindl.*—A handsome compact-habited dwarf-growing species, with a short erect stem from 6 inches to 1 foot in height, clothed with distichous linear acutely praemorse deflexed light green channelled leaves, and bearing erect axillary racemes of small crowded cinnabar-red flowers. It is a free-flowering kind, and blooms in May and June. It will thrive well on a block suspended from the roof.—*East Indies*.

FIG.—*Bot. Mag.*, t. 5326 (as *miniaturum*—f. Batem.); *Batrm. Second Cent. Orch. Pl.*, t. 130; *L'ill. Hort.*, t. 493; *Orchid Album*, iii. t. 107; *Puydt, Les Orch.*, t. 38.

S. CURVIFOLIUM LUTEUM, *Hort.*—A somewhat rare plant, in habit resembling the preceding; the flowers, however, instead of being orange-scarlet, are clear yellow, which renders it very distinct from the ordinary form.—*Moulmein*.

S. FURCATUM, *Hort.*—A distinct and fine species, which grows somewhat slowly, and has stout leaves about 8 inches long. The flowers of this are more laxly set on the spike than in *S. guttatum*, and are of a white colour spotted with rose. It blooms during July and August, and continues in perfection three weeks.—*India; Java*.

S. GIGANTEUM, *Lindl.*—A very beautiful free-blooming species, which has deliciously sweet-scented flowers; it blooms in winter, and will last in full beauty for six weeks during the dull weather of that season. The stem is short, erect; and the broadly lorate obliquely bilobed leaves, about 1 foot long and 3 inches in width, are stout in texture, and streaked on the surface; the

flowers are produced in long dense drooping racemes from the axils of the leaves, the sepals and petals being white spotted with amethyst, the wedge-shaped dilated lip of a beautiful mauve-violet; the column is greenish.—*Burmah*.

FIG.—*Bot. Mag.*, t. 5635; *Jennings, Orch.*, t. 8; *Flore des Serres*, tt. 1765-6; *Orchid Album*, ii. t. 56; *L'Orchidophile*, 1886, p. 163; *Reichenbachia*, i. t. 22; *Vitch's Man. Orch. Pl.*, vii. p. 114.

SYN.—*Vanda densiflora*.

S. GIGANTEUM ILLUSTRE, *Rehb. f.*—A splendid variety of the old favourite *S. giganteum*, in which the leaves are longer and broader, having more prominent veins; the raceme of flowers is longer, the individual flowers are larger, and are set more loosely on the rachis; the colours are richer, the spots at the tip of the sepals and petals larger, and the lip is altogether of a richer brighter hue; in other respects it is similar to the Burmese variety. It flowers during the winter months.—*Cochin China*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 517; *Lindenia*, ii. t. 83.

S. GUTTATUM, *Lindl.*—A remarkably handsome species, which, according to Reichenbach, forms one of many varieties included by him under the name of *Rhynchosstylis retusa*. The stems are short, furnished with distichous arcuate leathery channelled leaves, 1 foot long, unequally truncate at the end, and of a dark green colour; the floral racemes are cylindraceous and arcuate, as long as the leaves. It blossoms from May to August, and remains three or four weeks in perfection, if removed to a cooler house, and kept free from damp. The flowers are closely set, so as to form massive wreaths of blossoms; the sepals and petals are ovate; the petals narrower, waxy white, spotted with deep rosy purple; the lip is small, its front lobe lanceolate inflexed, wholly purple, its spur truncately conical compressed, pubescent inside. There are two or three varieties of this species, which makes one of the finest of all plants for exhibition. Some remarkable specimens of it were shown in the year 1850, with from twenty to twenty-five spikes of flowers on each; but it is most unusual to see well-grown plants now-a-days.—*India; Java*.

FIG.—*Bot. Mag.*, t. 4108; *Bot. Reg.*, t. 1443; *Puydt, Les Orch.*, p. 227, f. 230; *De Vries, Illus.*, t. 14; *Gard. Chron.*, 1845, p. 364, with fig.; *Id.*, N.S., i. p. 219, f. 55 (specimen plant); *Hart. Parad.*, ii. t. 3; *Blume, Tabell.*, t. 49; *Hook. First Cent. Orch. Pl.*, t. 91.

SYN.—*Aërides guttatum*; *A. retusum*; *Epidendrum retusum*; *Limodorum retusum*; *Rhynchosstylis retusa guttata*; *R. guttata*; *Sarcunthus guttatus*.

S. GUTTATUM GIGANTEUM, *Hort.*—A magnificent variety of *S. guttatum*, having the leaves longer and spotted; the racemes are also much longer, and the flowers more distinct in the markings. It makes a superb exhibition plant, as it blooms in June and July, and will last three or four weeks in perfection.—*India*.

FIG.—*L'Orchidophile*, 1883, p. 273.

S. GUTTATUM HOLFORDIANUM, *Williams.*—This splendid variety is one of the finest yet obtained. The leaves are broader than those of the ordinary form of *S. guttatum*, and more præmorse at the ends; the flower spikes are also much larger and longer, and the flowers of a richer colour than in those of

the kind just named, the lip in the present form being a rich crimson. This was bloomed first by the late R. S. Holford, Esq., Weston Birt, Gloucestershire in compliment to whom it is named.—*India*.

FIG.—Warner, *Sel. Orch. Pl.*, ii. t. 18.

S. HARRISONIANUM.—See *S. VIOLACEUM HARRISONIANUM*.

S. HENDERSONIANUM, *Rchb. f.*—This small compact-growing species is very distinct, and makes a pretty subject either for basket or block. The ligulate keeled distichous leaves are about 6 inches long, of a lively green, and the erect racemes are produced from the axils of the leaves, and bear numerous flowers, which are of a beautiful rose colour, with a compressed white lip, reduced to little besides the spur. R. H. Measures, Esq., of Streatham, grows this plant to great perfection, and flowers it freely.—*Borneo*.



SACCOLABIUM HENDERSONIANUM.

FIG.—*Bot. Mag.*, t. 6222; *Orchid Album*, vi. t. 275; *Lindenia*, vii. t. 313; *Veitch's Man. Orch. Pl.*, vii. p. 116.

S. HUTTONI.—See *AERIDES THIBAUTIANUM*.

S. MINIATUM, *Lindl.*—A pretty distinct small-growing Orchid, not so showy as some of the other species, but well deserving attention on account of its distinct colour. It has short erect stems, clothed with lorate channelled distichous leaves obliquely truncate at the apex, and short spreading cylin-

draceous racemes of small but gay red-orange flowers, which are produced in March and April, and last three weeks in beauty. This will do well on a block of wood without moss. A variety called **CITRINUM**, said to be from the Philippine Islands, has the flowers of a lemon-yellow with a dark centre, which probably indicates the mouth of the spur.—*Java*.

FIG.—*Bot. Reg.*, 1847, t. 58; *Journ. of Hort.*, 1892, xxiv. p. 449, f. 77.

S. PECHEI, *Rchb. f.*—This, according to the late Professor Reichenbach, is a singular novelty, having broad ligulate leaves, blunt, bilobed at the apex, 7 inches long and 2 inches broad; the flowers resemble those of the *calceolare* group, but have the anterior blade of lip entire; the sepals and petals are ochre-coloured with red spots; the blade of the lip is nearly white, and there are a few red spots at the yellow base of the spur.—*Burmah*.

S. PRAEMORSUM, *Hort.*—A very lovely form, which would appear to be one of the many variations referred to by Reichenbach under his *Rhynchostylis retusa*. The leaves are stout and fleshy, broad, dark green, prae-morse at the

end, and the racemes are long and dense, the flowers white, thinly spotted with lilac. It blooms in May and June, and lasts three weeks in perfection. A slow-growing kind, which makes a fine exhibition plant. There has been a variety imported which is freer in growth, produces much finer spikes, and is altogether superior to the form first introduced.—*Malabar*.

FIG.—*Gard. Mag. Bot.*, i. p. 253, with fig.; *Flore des Serres*, vii. p. 92, with fig.

S. RETUSUM, *Hort.*—A fine handsome free-growing form, and probably like the last one of the many varieties of *Rhynchosstylis retusa* indicated by Reichenbach when treating of that species. It is more robust in habit than most other forms, blooms in May and June, and produces in great abundance long racemes of flowers, which are waxy white beautifully spotted with pink. These continue in perfection three or four weeks. It is a useful plant, and one which comes into bloom rather earlier than any of the other kinds.—*Java*.

FIG.—*Flore des Serres*, tt. 1463-4; *Veitch's Man. Orch. Pl.*, vii. p. 55.

SYN.—*Rhynchosstylis retusa*.

S. RHEEDII.—See *S. BLUMEI*.

S. RUBRUM.—See *S. AMPULLACEUM*.

S. TURNERI, *Williams*.—This is the finest *Saccolabium* which has come under our notice. The leaves are about 1 foot long, and 1½ inch broad, the end of the leaf having a distinct praemorse termination; the floral racemes are fully 2 feet long, and are densely covered with its beautiful lilac-spotted flowers. It is much handsomer than the varieties of *S. guttatum*, and was first flowered by W. Turner, Esq., of Winsford, and exhibited by him under the name of *S. praemorsum*, but it is far superior to that species, both in the brilliant colouring of its flowers, and the great length of its spikes. The original plant was exhibited at the Manchester Show in June, 1878, and bore four spikes, each 2 feet in length, of its handsome blossoms; it was then awarded the first prize as a specimen Orchid, and was the admiration of every one who saw it. It flowers in June.—*India*.

= retusa

S. VIOLACEUM, *Lindl.*—This magnificent species is one of those referred by some authors to the genus *Rhynchosstylis* of Blume. The stems are erect, stoutish, thickly clothed with the recurved distichous foliage; the leaves are a foot or more in length, and 2 inches in breadth, of a rich deep green, somewhat striated with lines of a deeper colour; from the leaf-axils are produced the showy racemes, 12 to 15 inches in length, in which the flowers are very numerous, the sepals and petals pure white, spotted with mauve, and the lip dark mauve, marked with deeper coloured lines. It generally blooms in January and February, and lasts four or five weeks in perfection if kept from the damp. The plant succeeds in a pot well drained, and surfaced with a little growing sphagnum moss.—*Manilla*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 14; *Puydt, Les Orch.*, t. 39 (poor).

SYN.—*Vanda violacea*; *Rhynchosstylis violacea*.

S. VIOLACEUM HARRISONIANUM, *Williams*.—A beautiful white-flowered variety of *S. violaceum*. It is a stout-growing plant, with erect stems, bearing distichous leaves, which are broadly oblong, keeled beneath, striated, and

unequally bilobed at the apex, but of a somewhat lighter green colour than in the typical *S. violaceum*; it produces dense axillary racemes, sometimes as much as 2 feet long, of large pure white blossoms, which are remarkably sweet-scented, and as these are produced in the winter season they become doubly valuable on that account.—*Pulo Copang*, an island in the Chinese Seas.

FIG.—*Bot. Mag.* t. 5483; *Flore des Serres*, t. 2412; *Orchid Album*, v. t. 236; *Veitch's Man. Orch. Pl.*, vii. p. 118.

SYN.—*S. Harrisonianum*.

SARCOCHILUS, R. Brown.

(Tribe Vandeeae, subtribe Sarcantheeae.)

A genus of epiphytal Orchids containing about thirty species, most of which are, however, unknown to cultivators in this country. Several of the species included by Bentham in this genus were placed by Reichenbach under *Thrixspermum*. They are distributed over India, Malaysia, Australia, and the Pacific Islands.

Culture.—These plants may be grown in sphagnum moss with good drainage, either in baskets or pots, suspended from the roof, and should be placed at the warmest end of the East Indian house. They should be well shaded from the sun and kept moist during the summer, even in winter they should never be allowed to become dry, as they have no thick fleshy bulbs to support them.

S. BERKELEYI, *Hooker f.*—Leaves ligulate obtuse, keeled beneath, dark green; racemes pendent many flowered; flowers small creamy-white; lip stained with mauve; dorsal sepal slightly hooded; lip saccate three-lobed, side lobes small, middle lobe having two horn-like projections; column short and with a beaked anther resembling the head and neck of a bird. Discovered by Major-Gen. E. S. Berkeley.—*Malay Archipelago*.

FIG.—*Orchid Album*, x. t. 436; *Veitch's Man. Orch. Pl.*, vii. p. 57.]

SYN.—*Thrixspermum Berkeleyi*.

S. FITZGERALDI, *F. von Müller*.—A very pretty little Australian species discovered by Mr. Robert Fitzgerald, of Sydney, who found it close to the Naroo Falls and the surrounding streams, attached to the dripping rocks, which it covers with its green roots; leaves leathery, oblong, about 5 inches long, scapes pendent, many flowered; the flowers measure about 1 inch across; sepals and petals similar ovate, white in colour, densely spotted at the base with rosy-purple in concentric lines of elongated narrow spots, similar to what obtains in *Odontoglossum Cervantesi*; lip short, saccate, three-lobed, the side lobes white spotted with rosy-purple, the middle lobe yellow.—*Australia*.

FIG.—*Fitzgerald's Austr. Orch.*, i. part 2; *Veitch's Man. Orch. Pl.*, vii. p. 58.

S. UNGUICULATUS, Lindl.—This old plant was re-imported by us as a supposed new *Phalaenopsis*; indeed in growth it very much resembles some of the species of that genus. The flower spikes issue from the side of the stems amongst the lower leaves, and are pendent; the sepals and petals are pure ivory-white and thick in texture; the lip is unguiculate, fleshy, white; the side lobes striped with reddish-crimson, and the front lobe is spotted with the same colour; flowers produced during the summer months.—*Philippine Islands; Burmah.*

FIG.—*Orchid Album*, vi. t. 266.

SYN.—*Thrixspermum unguiculatum*; *Phalaenopsis Ruckeriana*.

SATYRIUM, Swartz.

(Tribe Ophreæ, subtribe Satyriæ.)

A genus of terrestrial habit, natives of South Africa, Northern India, and a few other places, some of the species being exceedingly pretty; they have tuberous roots and are deciduous; the spike is many flowered, the flowers being ringent, the sepals and petals are connate at the base, and all directed downwards. There are numerous species and varieties, many of which have from time to time been in cultivation, but they appear to drop out from our collections, mostly through careless treatment during their dormant and resting season, so that when required to start again in the spring of the year they are found to have perished.

Culture.—The whole of the species thrive in the cool house, or what is still better perhaps, in the cold frame, requiring only to be protected

from the frost; they require to be well drained, and to be potted or planted out in a mixture of good turfy loam, some peat and leaf-mould, and a little sharp sand; water sparingly at first, but when they have grown a little, they may have a more abundant supply, a moist atmosphere must be maintained in order to prevent the ravages of thrips.



SATYRIUM AUREUM.

S. AUREUM, *Paxton*.—This is a really fine thing, growing 1 foot or more in height, producing its deep orange flowers, which are shaded with rich crimson, in July and August, and continuing in perfection a long time. We saw it growing very freely at Heckfield, in the collection of the late Lord Eversley, where many curious and interesting terrestrial species were at one time to be found.—*South Africa*.

FIG.—*Paxton, Mag. Bot.*, xv. p. 31, with tab.

SCHLIMIA, *Planchon*.

(Tribe Vandeeae, subtribe Maxillarieae.)

A small genus of epiphytal plants, having oblong sub-fusiform one-leaved pseudobulbs, and erect simple spikes of largish flowers, the dorsal sepal of which is narrow, and the lateral ones broad and united to form an ample saccate chin, while the lip is small and included. There are three nearly related described species, all found on the Colombian Andes.

Culture.—These desirable and curious plants succeed well in the *Cattleya* house, grown in a pot with good drainage.

S. TRIFIDA, *Rehb. f.*—This is a very curious species, and well worth cultivation. In growth it resembles a *Stanhopea*, having a cluster of elongate-ovate pseudobulbs, each furnished with a solitary oblong acute membranaceous leaf, narrowed into a petiole at the base; the peduncle is lateral, drooping, deep purple, bearing a one-sided raceme of about four flowers of thick texture, and of which the ligulate dorsal sepal is turned downwards, and the lateral sepals are saccately connate into a helmet-like form, waxy white, with a few purple spots inside; the linear acute petals are bent outwards, and the lip has a pandurate hypochil, trifid at the apex, which is white marked with rich orange, the epichil being lance-shaped. It is a great acquisition on account of its delicious perfume and its rarity; the perfume is said to be between that of jasmine and bergamot.—*New Grenada*.

FIG.—*Gard. Chron.*, N.S., vii. p. 141, f. 22; *Veitch's Man. Orch. Pl.*, ix p. 147.

SCHOMBURGKIA, *Lindley*.

(Tribe Epidendreeae, subtribe Laelieae.)

Of this epiphytal genus but few of the species are desirable for cultivation where space is at all limited, for though the blossoms of many of them are individually very attractive, they are too shy in flowering, and as a rule they produce long spikes with but very few blossoms on them. In growth they resemble *Cattleya* or *Laelia*, except that they are less compact. The stems are erect, fusiform. 12 inches or more in length, with generally from one to three leaves on the top; and



SCHLIMIA TRIFIDA.
(From the *Gardeners' Chronicle*.)

the flower scapes proceed from their apex, and are from 3 to 5 feet long. The flowers are large, with spreading sepals and petals, which are more or less undulated, and the lip is erect, shortly connate with the base of the column, which is loosely enfolded by its side lobes, the central lobe being roundish or bluntly two-lobed, flat, or sometimes wavy. About a dozen species natives of Tropical America are known. Those mentioned below may be recommended for cultivation.

Culture.—They succeed in the *Cattleya* house on blocks, or in baskets suspended from the roof, in sphagnum moss or moss and peat mixed together, or they may be grown in pots equally well if that system is preferred. A liberal supply of water is necessary during the growing season; but after they have completed their growth, water should be withheld until they begin to show flower. Propagation is effected by parting the stems.

S. CRISPA, *Lindl.*—A pretty species, with fusiform stems a foot high, bearing at the top two or three large oblong lanceolate leathery leaves, and from the base of the upper leaf a bracteated peduncle from 3 to 5 feet long, at the apex of which is produced a broad crowded raceme of brown flowers, the oblong sepals and petals of which have a yellow undulated margin; the ovate oblong obtuse obscurely three-lobed lip is white. In the form figured in the *Botanical Magazine* the sepals and petals are wholly of a dull brick-red. The plant does best in a pot or basket, and will grow to a considerable size. It blooms during winter, and will last three weeks in perfection if the flowers are kept dry.—*Demerara*.

FIG.—*Sertum Orch.*, t. 10; *Bot. Reg.*, 1844, t. 23; *Bot. Mag.*, t. 3729.

S. HUMBOLDTI, *Rehb. f.*—A beautiful species, discovered by Humboldt and Bonpland in the beginning of this century, but which remained unknown in Europe till 1848, when Reichenbach named and described it. Wagner found it later in the same place. According to Veitch's Manual it was lost sight of in British gardens until in 1887 Messrs. Backhouse & Sons, of York, flowered it. Pseudobulbs oblong-pyriform, strongly ribbed, two- or three-leaved; leaves cuneate oblong obtuse; scapes produced from the top of the pseudobulbs; flowers resembling those of a *Laelia*; sepals oblong ligulate; petals obovate, broader than the sepals, rosy-purple; lip three-lobed, side lobes narrow, bent over the column, their apices turned a little outwards, mid lobe large, with a deep sinus in front, the margin serrate, magenta-purple; disk yellow, with purple lamellae at the base.—*Puerto Cabello, Venezuela*.

FIG.—*Xenia Orchidacea*, i. t. 52 (*Epidendrum Humboldtii*).

SYN.—*Epidendrum Humboldtii*.

S. LYONSI, *Lindl.*—A handsome kind. the "prettiest of the genus." The stems grow about 1 foot in height, and from their apex are produced the

leathery leaves, which are like those of *S. crispa*, and the tall flower scapes, which grow 3 to 4 feet long, and bear a broad raceme of numerous long-stalked flowers, the pedicels of which are yellow and deflexed at the tip, and the flowers themselves have obtuse ovate crispy sepals and petals, white, marked thickly with parallel transverse purple bars and spots on each side of the centre, and a smaller acute lip, scarcely spotted, white, edged with yellow. It will succeed either on a block or in a basket suspended from the roof, and lasts in bloom three weeks.—*Jamaica*.

FIG.—*Bot. Mag.*, t. 5172; *Flore des Serres*, t. 2130.

S. ROSEA, *Lindl.*—An old species, which appears to have been only recently re-introduced to cultivation, allied to *S. undulata*, but having smaller flowers than that species. It flowered with us in 1892, and with H. J. Ross, Esq., of Florence, in 1893. The sepals and petals are reddish-purple, margins wavy; lip rosy-purple. This species is freer flowering than most of the *Schomburgkias*, and has shorter spikes than is usual with many kinds. Flowers in winter and early spring.—*New Grenada*.

S. SANDERIANA, *Rolfe*.—This beautiful species is allied to *S. Humboldti*, and was introduced in 1886 by Messrs. F. Sander & Co., who first flowered it in 1891. Pseudobulbs conical cylindrical, about 9 inches high, ribbed, bearing at the top two thick rigid oblong obtuse leaves, about 5 inches long and 2½ inches broad; scape exceeding 2 feet in length, many-flowered; flowers rosy purple, about 3 inches across; sepals oblong-lanceolate; petals broader, oblanceolate-oblong; lip three-lobed, mid lobe 1½ inch long, rounded in outline, margin wavy, veined with deep rosy purple in the centre.—*Tropical America*.

FIG.—*Journ. of Hort.*, 1891, xxii. p. 163, f. 30; *Id.*, xxiii. p. 503, f. 92; *Reichenbachia*, 2nd ser., ii. t. 59.

S. THOMSONIANA, *Rehb. f.*—A species with the habit of *S. tibicinis*, but somewhat smaller; the flowers also resemble that species. Sepals ligulate, undulate, pale yellow inside, outside mauve, dotted with white, bordered with pale yellow, and a green mid-nerve at the top; petals light sulphur-yellow having some dark purple lines and streaks at the back; lip three-lobed, maroon-purple, disk yellow with some blackish purple keels. It flowered in the collection of W. J. Thomson, Esq., of St. Helens, Lancashire, to whom it is dedicated.—*Native country not stated*.

S. TIBICINIS, *Bateman*.—The most beautiful species of the genus, a truly noble and most effective plant. The stems are conical in outline, horn-shaped, annulate, furrowed, 1½ foot long, hollow, and of ample size when well grown—indeed, it will not flower until the stems become strong; they bear at the top two or three oblong stout leathery spreading leaves, and a terminal panicle of many flowers on a scape 5 feet or more in length; these flowers measure more than 2 inches across; the sepals and petals are oblong-obtuse, wavy, pink, spotted with rich chocolate, the lip white, with rose colour on the large erect side lobes. Its usual time of blooming is May and June, and it will keep flowering for six weeks. We have found it to grow best on a block, with plenty of heat and moisture during the growing season. The variety **GRANDIFLORA** has larger

and more handsomely coloured flowers, the sepals and petals palish purple, deeper and redder on the inner surface, especially towards the ends, the lip with the side lobes purplish towards the edges outside, orange streaked with purple within, the disk white, and the front lobe white, stained with yellow and bordered with purple.—*Honduras*.

FIG.—*Bot. Mag.*, t. 4476 (*grandiflora*); *Batem. Orch. Mex. et Guat.*, t. 30; *Bot. Reg.*, 1845, t. 30 (*grandiflora*); *Flore des Serres*, t. 49 (*grandiflora*); *Orchid Album*, v. t. 205; *Veitch's Man. Orch. Pl.*, ii. p. 103; *Gard. Chron.*, 3rd ser., 1888, iv. p. 212, f. 25; *Id.*, 1891, ix. p. 651, f. 126.

SYN.—*Epidendrum tibicinis*.

S. UNDULATA, *Lindl.*—A pretty species, discovered by Linden in 1841 near Truxillo, in Venezuela, and found later by him in New Grenada, and by Wagener, near Caracas. It first flowered in this country in the collection of the late Mr. Rucker, at Wandsworth. It has fusiform pseudobulbs, about 1 foot high, bearing lovely green leathery leaves, from 6 to 8 inches long; spike terminal, from 2 to 5 feet long, bearing at the top a somewhat dense raceme; sepals and petals linear-oblong, purplish-brown, much undulated and twisted; lip three-lobed, side lobes oblong, arching over the column, rosy-purple; mid lobe cordate apiculate, purple, bearing on the disk five raised white ridges. Flowers in March and April, lasting several weeks in perfection.—*Venezuela; Caracas; New Grenada*.

FIG.—*Bot. Reg.*, 1845, t. 53; *Pescatorea*, t. 32; *Warner, Sel. Orch. Pl.*, ii. t. 21; *L'Orchidophile*, 1889, p. 16 (plate); *Orchid Album*, vii. t. 335.



SCHOMBURGKIA TIBICINIS.

SCUTICARIA, *Lindley*.

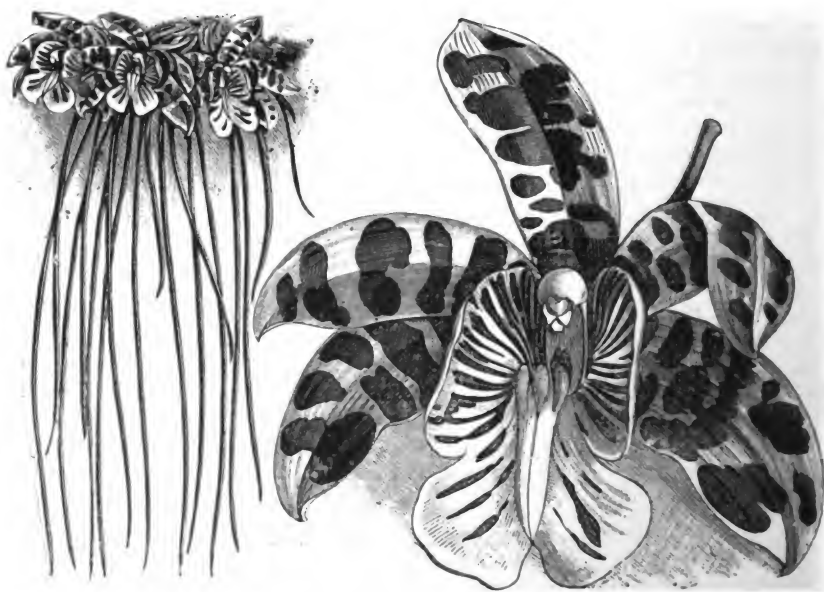
(Tribe Vandeeae, subtribe Maxillarieae.)

A small genus of curious epiphytal plants, producing very short fleshy one-leaved stems, the leaves being very long, fleshy, sub-terete, furrowed, continuous with the stem. The scapes are one-flowered, about 2 inches high, and grow from the side of the stem, the flowers themselves being very handsome. The sepals and petals are erecto-patent, the lateral sepals adnate with the foot of the column forming a prominent

chin, and the lip is sessile, articulated, broad and concave, the lateral lobes large, erect, the middle one smaller and spreading. Two or three species are known, all from Tropical America.

Culture.—The *Scuticarias* will do either in the *Cattleya* or East India house, and may be grown either on blocks or in baskets with moss, a liberal supply of water being necessary at the roots in the growing season. They are propagated by dividing the plants just as they begin to grow.

S. DODGSONI, *Williams*.—A very distinct and handsome species. The leaves are terete, 1 foot or more in length, and of a dark green colour; the peduncle is short, bearing two flowers; the sepals and petals light brown inside, darker at the base, and blotched with light yellow; the lip white, cup-shaped, beautifully streaked with light rose and yellow.—Said to have been introduced from *Demerara*.



SCUTICARIA STEELII.

S. HADWENII, *Hort*.—A pretty and rare Orchid, whose few cylindrical fleshy roots grow from a short knotty rhizome, which also produces from a sheathing swollen base the terete leaves, $1\frac{1}{2}$ foot long, acute at the top, and furrowed on the inner face. The scapes are erect, each bearing one flower, which has oblong spreading sharply acuminate sepals and petals of a pale yellow green irregularly blotched with dark brown, and a large obovate cucullate lip, white marked with flesh-coloured longitudinal spots, downy inside, and having an oblong crest.

three-toothed in front. The plant is very much like *S. Steelii*, only the flowers of *S. Hadwenii* are more erect, and the scape is an inch or two higher.—Brazil.

FIG.—*Bot. Mag.*, t. 4629; *Flore des Serres*, t. 731.

SYN.—*Bifrenaria Hadwenii*.

S. KEYSERIANA, *Hort.*—This species was exhibited by Messrs. F. Sander & Co. before the Royal Horticultural Society in May, 1888. It is dedicated to Sir Polydore de Keyser, and resembles *S. Steelii* in habit. The leaves are cylindrical pendulous, and several feet in length; flowers fleshy, broad; sepals and petals yellow, heavily spotted with purple-maroon; lip broad, open, and streaked with purple-maroon on a lighter ground.—*Roraima, Guiana*.

FIG.—*Journ. of Hort.*, 1888, xvi. p. 421, f. 55.

S. STEELII, *Lindl.*—A handsome epiphytal plant of peculiar habit. The branching rhizome, which is ebulous, bears on each branch a solitary terete channelled flagelliform leaf as thick as a swan's quill and 2 to 4 feet long, tapering to a fine point; the scape is one- to three-flowered, the flowers large, fragrant, pale primrose-yellow blotched with reddish-brown, and the lip is three-lobed, pale yellow, striately marked with brownish-crimson, especially on the lateral lobes, the crest being oblong with three orange-coloured teeth in front. It produces its blossoms at different times of the year, lasting a long time in perfection.—*British Guiana*.

FIG.—*Bot. Reg.*, t. 1986; *Orchid Album*, ii. t. 55; *Bot. Mag.*, t. 3573; *L'Orchidophile*, 1887, p. 369; *Veitch's Man. Orch. Pl.*, ix. p. 149.

SYN.—*Maxillaria Steelii*.

SOBRALIA, Ruiz et Pavon.

(Tribe Neottieae subtribe Vanilleae.)

This genus contains some very handsome species which are quite distinct from most other Orchids in habit and general aspect. They are all strong free-growing terrestrial plants, the long slender reed-like stems furnished with dark green plaited sheathing leaves, and bearing at their summit large showy flowers, as many as six or more being produced from a single stem, but rarely having more than one expanded at one time. The blossoms in most of the species are very large and brilliantly-coloured; and, although individually they last but a short time, this is compensated for by the quick succession of new flowers, for as soon as one decays another appears. The sepals are sub-equal, erect, connate at the base, the petals similar or broader, the lip erect from the base of the column, around which its lateral lobes are folded, the limb concave, undulated or fimbriate, undivided or two-lobed, and the column elongate and sub-incurved. There are about thirty species, found in the Andes of Tropical America, from Peru to Mexico.

Culture.—Either the Mexican or Cool house will suit these plants, which thrive best in pots of large size potted in rough fibrous peat, in which they grow best, and which should overlie about 3 inches of drainage. An abundant supply of water at the roots in the growing season is essential to their well-being, but afterwards much less will suffice. The stems grow up in thick tufts, and when the plants get too large, they should be turned out of the pot, and divided into several pieces, each of which will soon grow and make a flowering plant. The genus is far too much neglected by Orchid growers.

S. LEUCOXANTHA, *Rehb. f.*.—A handsome species, allied to *S. macrophylla*, but dwarfish in habit, the stems being a foot or more in height, and the plicate leaves cuneate oblong elongately acuminate, with the nervose sheaths marked by black warts. The bracts of the spathe are acute congested, scarious spotted with brown, and from between them issue the flowers, which are as large as those of *S. Fenzliana*, the oblong ligulate apiculate recurved sepals white, the somewhat shorter and broader petals also white, and the lip white outside, deep golden yellow flushed with orange in the throat and disk, passing off to white at the edge, oblong flabellate, convolute at the base round the thick clavate column, which is half its length, the expanded front portion bilobed and crenulate in front. Flowers in late summer.—*Costa Rica*.

FIG.—*Orchid Album*, vi. t. 271; *Bot. Mag.*, t. 7058; *Journ. of Hort.*, 1888, xvii. p. 93, f. 10; *Id.*, 1893, xvii. p. 93, f. 13.

S. LILIASTRUM, *Lindl.*.—A distinct and handsome species, with stems 8 to 10 feet high, furnished with lanceolate very acute striated leaves with a vaginate base, and terminal distichous many-flowered racemes with spathaceous bracts, the flowers large, pendulous, white with yellow veins, produced in July and August; they, however, last but a short time in beauty. There are two varieties of this plant, one much better than the other. Dr. Lindley refers also to a bright rose-coloured form, the lip having white veins, which is that figured in the *Sertum*.—*British Guiana*; *Bahia*.

FIG.—*Sertum Orch.*, t. 29.

SYN.—*Epidendrum Liliastrum*.

S. LOWII, *Rolfe*.—A new and very distinct dwarf-growing species, recently introduced by Messrs. Low & Co., after whom it is named. The stems are from 1 to 1½ foot high, leaves narrowly lanceolate, acuminate; sepals and petals about 2 inches long; lip somewhat shorter than sepals, the whole of a deep purple colour. It appears to be very free-flowering, but the flowers last a very short time. Flowers in autumn.—*Cauca, New Grenada*.

S. LUCASIANA, *Hort.*.—This beautiful plant was exhibited by C. T. Lucas, Esq., of Warnham Court, Horsham, before the Royal Horticultural Society on June 21st, 1892, when it was much admired, and a first-class certificate awarded. The flowers are similar in shape and size to those of *S. xantho-*

leuca; sepals and petals white, faintly tinged with rose; the lip being broad and much flattened out, of a soft rosy-purple colour; throat yellow.—*Tropical America*.

FIG.—*Gard. Mag.*, 1892, p. 382; *Journ. of Hort.*, 1893, **xxvi.** p. 75, f. 11.

S. MACRANTHA, *Lindl.*—A remarkably handsome species, no doubt the finest of the genus. The stems are 6 to 8 feet high, with oval acuminate plicate leaves, and short racemes of flowers, the flowers being individually large, 6 inches across, aromatic, of a beautiful rich purple and crimson, the sepals oblong, the petals broader and crispy in the upper part, and the lip folded round the column at the base, very broad at the roundish bilobed apex, and wavy at the edge, having a pale yellowish spot in the centre. It blooms during the summer months, producing the blossoms successionally, each flower lasting three days in perfection. This makes a fine plant for exhibition.—*Mexico*; *Guatemala*.

FIG.—*Bot. Mag.*, t. 4446; *Butem. Orch. Mex. et Guat.*, t. 37; *Paston. Mag. Bot.*, xiv. p. 241, with tab.; *Moore. Ill. Orch. Pl. (Sobralia)* t. 2; *Flore des Serres*, t. 669; *Revue Hort. Belge*, 1891, p. 36, t. 4.



SOBRALIA MACRANTHA.

S. MACRANTHA ALBIDA, *Williams*.—This chaste and beautiful variety was exhibited by us before the Royal Horticultural Society as far back as 1871. The stems are from 3 to 4 feet high, the flowers being upwards of 6 inches across, which are produced in great profusion; the sepals and petals are large and broad, of a soft creamy-white colour; the lip is large and well expanded of a rich soft purple; this contrasted with the white of the sepals and petals produces a charming effect.

FIG.—*Gard. Chron.*, 1871, p. 906, f. 191.

S. MACRANTHA DELICATA, *O'Brien*.—A variety with white flowers slightly tinged with lavender on the sepals and petals, the lip with a pale lilac margin. It flowered in the collection of F. A. Bevan, Esq., of Ludgrove, Barnet.

S. MACRANTHA KIENASTIANA, *Rehb. f.*—A dwarf-growing variety not exceeding 20 inches in height, which was flowered in 1888 by Herr Consul Kienast-Zolly of Zurich. The flowers are of a most beautiful white colour, which Reichenbach describes as "*hors de ligne* in its most exquisite purity surpassing all shades of white I have ever seen."

S. MACRANTHA PALLIDA, *Hort.*—A very distinct variety, having large flowers, 7 inches across, of a beautiful pale rose colour; the lip nearly white. It blooms during the summer months, and continues a long time in perfection.—*Guatemala*.

S. MACRANTHA SPLENDENS, *Hort.*—A charming variety which has darker flowers than those of *S. macrantha*, but they are not so large; they are produced from June to August. There is a form of this called "Woolley's" variety, which is very dwarf in habit, and produces magnificent flowers in June and July.—*Guatemala*.

S. ROSEA, *Poeppig et Endl.*—A very fine species, with stout stems 4 to 6 feet high, furnished with oval acuminate leaves, and very large flowers in a short raceme borne on a flexuose rachis with large boat-shaped bracts, the sepals and petals dark mauve, the lip, which is very open, crimson with a white centre. The plant will produce four flowers on a spike, open at the same time, and thus makes a grand display, while unlike many of the others, it remains in bloom a considerable time.—*New Grenada*.

FIG.—*Poepp. et Endl., Nov. Gen. et Sp.*, i. t. 93 (*rosea*); *Xenia Orch.*, i. t. 42 (*Ruckeri*); *Warner, Sel. Orch. Pl.*, iii. t. 19 (*Ruckeri*); *Puydt, Les Orch.*, t. 40.

SYN.—*S. Ruckeri*.

S. RUCKERI.—See *S. ROSEA*.

S. SANDERAE, *Rolfe*.—A very desirable species, allied to *S. leucoxantha* and *S. xantholeuca*. The flowers are paler in colour than those of *S. xantholeuca*, being sulphur white, the throat bright yellow. Named in honour of Mrs. Sander.—*Central America*.

S. WILSONIANA, *Rolfe*.—This species was introduced by Messrs. F. Sander & Co. with *S. leucoxantha*. It is a near ally of *S. Warcewiczii*. The leaves are 6 to 7 inches long, lanceolate, acuminate; sepals and petals whitish, slightly tinged with rose; front lobe of lip rosy-pink, with a yellow throat and disk.—*Central America*.

S. XANTHOLEUCA, *Hort.*—A very rare and handsome species of distinct character, which was flowered by Mr. Hill, gardener to the late R. Hanbury, Esq., The Poles, Ware, and subsequently by Mr. Palmer, gardener to T. N. Powell, Esq., Drinkstone Park, Suffolk, by whom it was purchased for *S. macrantha*. It has the usual reed-like stems, with lanceolate acuminate plaited leaves, the sheaths of which are dotted with brown, and large handsome deflexed flowers with oblong lanceolate sepals, broader petals wavy at the edge, both of a pale or sulphur-yellow, and a longer emarginate lip, which is very much frilled and of a deeper yellow.—*Native country not stated*.

FIG.—*The Garden*, 1832, xxii. p. 508, t. 366; *Orchid Album*, vi. t. 250; *Reichenbachia*, i. t. 44; *Gard. Chron.*, 3rd ser., 1889, v. p. 9, f. 1; *Revue Hort.*, 1890, p. 12 (plate).

SOPHRO-CATTLEYA, Rolfe.

(Tribe Epidendreae, subtribe Laeliace.)

A hybrid genus recently established by Mr. Rolfe for the reception of hybrids raised between the genera *Cattleya* and *Sophronitis*; the first plant, a most remarkable one, *S. Batemaniana*, was included by Reichenbach under *Laelia*.

Culture.—Same as *Cattleya* and *Laelia*, which see.

S. BATEMANIANA, Rolfe.—This interesting and beautiful hybrid is the result of a cross between *Sophronitis grandiflora* and *Cattleya intermedia*, and was called by the late Professor Reichenbach "a lovely gem, a miniature *Laelia*, with the short peduncle of a *Sophronitis*." It is described in *Veitch's Manual of Orchidaceous Plants* as follows: "Latest formed stems sub-cylindric or clavate, 3 inches high, diphylous; leaves ovate-oblong, 3 inches long, leathery, deep green; peduncles three- to five-flowered; flowers 3 inches in diameter; sepals broadly lanceolate, petals broader, ovate-oblong, both sepals and petals bright rose colour, toned with scarlet; lip very distinctly three-lobed, the side lobes roundish convolute over the column, slightly reflexed towards their apex, pale lilac externally, on the inner side cream-white bordered with amethyst-purple at the anterior margin; middle lobe broadly oval, undulate at the margin, crimson purple; column white, stained with purple at the apex."—*Garden hybrid*.

FIG.—*Veitch's Man. Orch. Pl.*, ii. pp. 92, 93; *Journ. of Hort.*, 1887, xv. p. 55, f. 6; *Id.*, p. 472, f. 56.

SYN.—*Laelia Batemaniana*.

SOPHRONITIS, Lindley.

(Tribe Epidendreae, subtribe Laeliace.)

A small genus of dwarf-growing tufted Orchids, some of the species of which are very beautiful. On this ground, as well as on that of their occupying but little space, most of those which are known are worth cultivating. They are evergreen plants, producing their flowers in short few-flowered racemes or solitary from the top of the pseudobulbs, which are small, clustered, and furnished each with one or two leathery or fleshy leaves. The broad-petalled flowers are very showy. There are four or five species recorded from the Organ Mountains of Brazil.

Culture.—These pretty little plants thrive best on blocks of wood in the Cool House, or in small baskets, with a moderate supply of heat and moisture all the year round. They are propagated by dividing the plants just as they begin to grow.

S. CERNUA, *Lindl.*—A remarkably small epiphyte found on trees, and attaining a height of about 3 inches, growing amongst the moss. It has short two-edged stems (scarcely pseudobulbs) sheathed with scales, produced on a creeping rhizome, each bearing a solitary oval apiculate leaf rather more than 1 inch long, and a short effuse axillary raceme of small rosy-red flowers, yellowish in the centre; the column is white, with dark purple wings. It blooms during the winter, lasting long in beauty.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3677; *Bot. Reg.*, t. 1129; *Paxton, Fl. Gard.*, iii. p. 10, f. 236.

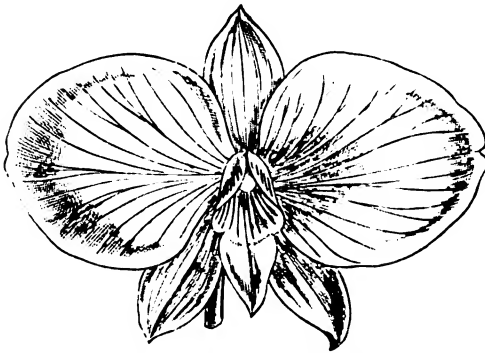
SYN.—*S. Hoffmannseggii*; *S. nutans*.

S. COCCINEA, *Rchb. f.*—An exceedingly beautiful species, with short oval terete stems, each bearing a single oblong acute dark green leaf, about 3 inches in length, and solitary flowers upwards of 3 inches in diameter, of stout substance, and of a brilliant rosy-scarlet colour; the sepals are linear-oblong obtuse, the petals three times as broad, and the undivided lip ovate cucullate at the base. Dr. Lindley included this plant under *S. grandiflora*. It blooms during the winter months, and should be either grown on a block with a little moss attached, or in a small basket with moss and a little peat, and suspended from the roof.—*Brazil*.

FIG.—*Flore des Serres*, t. 1716.

SYN.—*Cattleya coccinea*.

S. GRANDIFLORA, *Lindl.*—A truly handsome species, the finest of the genus, the flowers of which are large, and of a beautiful scarlet colour, lasting six



SOPHRONITIS GRANDIFLORA.

weeks or more in perfection. The pseudobulbs are oblong cylindraceous, bearing one elliptic leaf, and a solitary flower fully 3 inches across, with oblong-lanceolate sepals and roundish elliptic petals of a bright cinnabar or deep crimson-scarlet, and a three-lobed lip, the side lobes of which are incurved, and the acuminate front lobe flat, all these parts yellow with bright red streaks. This plant, which blooms in November and December, ought to be in every collection.

Two varieties of it are grown, the one producing short obtuse leaves, with exceedingly brilliant-coloured flowers, the other with the leaves and pseudobulbs longer; this latter appears to be the same as *S. coccinea*. Mr. Warner's figure represents forms with vermilion and crimson flowers respectively.—*Organ Mountains, Brazil*.

FIG.—*Sertum Orch.*, t. 5; *Bot. Mag.*, t. 3709; *Moore, Ill. Orch. Pl.*, (*Sophronitis*), t. 1; *Jennings, Orch.*, t. 5; *Floral Mag.*, t. 329; *Warner, Sel. Orch. Pl.*, iii. t. 5 (two forms); *Puydt, Les Orch.*, t. 41; *Paxton, Mag. Bot.*, ix. p. 193, with tab.; *Hart, Parad.*, i. t. 15; *Paxton, Fl. Gard.*, iii. p. 10, f. 237; *Hook. First Cent. Orch. Pl.*, t. 41; *Revue Hort. Belge*, 1887, p. 5 (plate); *Revue Hort.*, 1887, p. 492 (plate), f. 2 (var. *aurantiaca*); *Lindenia*, iv. t. 161; *Gard. Chron.*, 3rd ser., 1891, ix. p. 669, f. 127.

S. HOFFMANNSEGGII.—See *S. CERNUA*.

S. NUTANS.—See *S. CERNUA*.

S. VIOLACEA, *Lindl.*—A pretty and distinct species, having small oval pseudobulbs, each bearing a solitary linear dark green leaf longer than the one-flowered scape, which produces during the winter months violet-coloured flowers, which last long in beauty.—*Organ Mountains*.

FIG.—*Paxton, Fl. Gard.*, iii. p. 11, f. 238 ; *Bot. Mag.*, t. 6880 ; *Orchid Album*, vii. t. 291.

SPATHOGLOTTIS, *Blume*.

(Tribe Epidendraceae, subtribe Bletieae.)

A genus of terrestrial plants which for the most part inhabit the Eastern hemisphere, being found in various of the Indian and Malay Islands, Hong-Kong and Southern China, as well as in some of the Pacific Islands. It has not hitherto been particularly well represented in our Orchid houses, one small-flowered species, *S. Fortunei*, only being known in cultivation. They belong to the group of terrestrial Orchids, and the recent additions to the genus will, we hope, help to bring that interesting set of plants into more prominent notice. They are mostly plants with underground corms from which rise their ensiform plicate leaves, and stout spikes of bloom which are usually of some shade of yellow; some few species, however, have pseudobulbs and produce flowers of a white or rose colour, and these have a charming effect when grouped with the yellow ones. The genus is allied to *Bletia*, from which it is distinguished by its three-parted lip being clawed and having a pair of small fleshy plates at its base, and by its two-celled anther.

Culture.—These plants require thorough drainage, over which should rest a layer of living sphagnum moss to prevent the mould percolating into the drainage and choking it, and thus preventing the free outlet of water, of which they require a good supply during the growing season; but during the time when the corms are inactive they may be removed from the East Indian house and the water entirely withheld, saving just sufficient to keep the soil in a nice moist condition; this may be composed of about equal parts of peat, loam, and leaf-mould, to which may be added some chopped sphagnum moss and some sharp sand, this when properly mixed will make a good compost for the various species.

S. AUGUSTORUM, *Rehb. f.*—This species has been introduced by the Compagnie Continentale d'Horticulture from the Sondaic Archipelago, where it was discovered by M. Auguste Linden and M. Auguste de Bonne, to whom, as companions in travel, the species has been jointly dedicated by Professor Reichenbach. It is a most lovely species, with ovoid pseudobulbs, bearing several oblong-ligulate, acute, plicate, deep-green leaves, which leave annular scars on the upper end of the older bulbs; the flower scape is tall and erect, and is crowned by a crowded raceme of numerous beautiful flowers which are freely expanded, and each measures some $2\frac{1}{2}$ inches across; the sepals and petals, which are oblong acute, the latter rather the broader, being of a pale rosy-blush, and the three-lobed lip carmine-rose, the two lateral lobes deeper carmine, ligulate, retuse, and incurved, the middle lobe of a more rosy tint, oblong obovate, emarginate, tapering behind into a long narrow wedge-shaped claw. The callus is stalked, triangular, almost tetragonal at the summit, yellow marked with spots of carmine; and the column is clavate and incurved at the tip, where it is tinted with rose-colour. It was found at an elevation of about 1,300 feet in a hollow, beside a rocky torrent, where it was constantly moist and shady.—*Sunda Islands*.

FIG.—*Journ. of Hort.*, 1886, xiii. p. 277, f. 41; *Lindenia*, i. t. 25.

S. AUREA, *Lindl.*—A very beautiful and distinct species, with leaves 3 feet in length, and bright yellow flowers 3 inches across. It was introduced by Messrs. J. Veitch & Sons from Mount Ophir, Malacca, in 1849. This plant is well cultivated by Sir Trevor Lawrence, Bart., Dorking, and Lord Rothschild, Tring Park.—*Malacca*.

FIG.—*Gard. Chron.*, 3rd ser., 1888, iv. p. 93, f. 9; *Veitch's Man. Orch.*, 1st ed., vi. p. 5.



SPATHOGLOTTIS PLICATA.

flowers grow on an erect scape, eight or ten in number, in a crowded raceme at the upper end of the scape, and are more than $1\frac{1}{2}$ inch across, spread open, and of a pleasing purple colour; the sepals elliptic; the petals ovate; the lip

small and trifid, white with a few purple spots, and the column clavate and incurved, white on the inner face and purple on the outer. The disk bears a saddle-shaped deeply bifid callus. This species and the still more beautiful *S. Augustorum* will doubtless bring the genus *Spathoglottis*, which has hitherto been little esteemed, into more prominent notice. It was introduced by Messrs. Loddiges, from Penang, and was flowered by them about 1844, but has apparently slipped through the hands of our cultivators, as many another choice Orchid has done.—*Penang; Straits Settlements.*

FIG.—*Lindenia*, ii. t. 54.

STANHOPEA, Frost.

(Tribe Vandeeae, subtribe Stanhopieae.)

A genus of beautiful epiphytes, the majority of which have ovate furrowed pseudobulbs, bearing each at their summit a large dark green plaited leaf, some 12 inches or more long, and 6 or more inches broad; and from their base a deflexed or drooping scape furnished with several large curiously formed flowers, thick and waxy in texture, in most of the kinds highly coloured, and emitting a very strong perfume; unfortunately, they remain but a few days in perfection, which has probably led many Orchid growers to relinquish their culture—a circumstance which is much to be regretted, as they are free-flowering plants, and consequently a succession of blooms keeps them gay for a considerable time. The flowers have free spreading sepals and petals, and a very thick fleshy lip, which is variable and remarkable in structure, the hinder portion, constituting what is called the hypochil, being usually saccate, a middle part, called the mesochil, being often two-horned, and the anterior portion or epichil being more or less moveable. Sometimes one or other of these parts is deficient, and rarely they are all blended into a kind of slipper. They all come from Tropical America, some twenty or more species being known. We shall only mention a few of the best sorts, though there are many others well deserving a place in an Orchid collection, especially where room is not an object.

Culture.—*Stanhopeas* are of easy culture. They are best grown in baskets with sphagnum moss, and suspended from the roof; they require a liberal supply of water in the growing season, and plenty of shade. The baskets should be made shallow, and open at the bottom and sides, so that the flower scapes may easily find their way through. After their growth is completed they are the better for a good period of rest, during

which they should be kept nearly dry at the roots. They will grow well in either the East Indian or Brazilian house. These plants are subject to the attacks of the red spider and the thrips, to prevent which the leaves should be well syringed with clean tepid water, whenever the weather is hot and dry.

S. AMESIANA, *Hort.*—This chaste and beautiful plant was exhibited by Messrs. Low & Co., before the Royal Horticultural Society, on April 25th, 1893, when it received a first-class certificate. The flowers are very large, of a pure porcelain white and deliciously fragrant. It is named in honour of the late Hon. F. L. Ames, of Boston, U.S.A.—*Native country not stated.*

FIG.—Journ. of Hort., 1893, xxvii. p. 175, f. 26; *Gard. Mag.*, 1893, p. 332 (woodcut).

S. AUREA.—See *S. WARDII AUREA*.

S. BUCEPHALUS, *Lindl.*—A beautiful species, certainly one of the richest coloured in the whole family. It has small ovate ribbed pseudobulbs, each producing one stalked oblong acuminate plicate leaf, and a deflexed raceme of several large showy flowers, which are of a rich tawny-orange, with large blood-red blotches, and in which the hypochil is boat-shaped, the mesochil is bicornute, and the epichil is roundish ovate and cuspidate. Dr. Lindley makes two varieties, one with pale rich yellow flowers, with purple dots and small blotches everywhere except on the hypochil; and the other (**GUTTATA**) with the sepals, petals, and hypochil deep apricot, with four brown blotches on the hypochil and also on each petal. The flowers are usually produced about the month of August; and, like most of those in this family, they emit a powerful and fragrant odour.—*Peru; Ecuador.*

FIG.—Bot. Reg., 1845, t. 24; *Bot. Mag.*, t. 5278; *Moerr.*, *Ill. Orch. Pl. (Stanhopea)*, t. 2; *Humb. et Bonp. Pl. Equin.*, t. 27.

SYN.—Epidendrum grandiflorum; Anguloa grandiflora.

S. DEVONIENSIS, *Lindl.*—This beautiful species has ovate ribbed pseudobulbs, lanceolate plaited shortly stalked pale green leaves, and two-flowered peduncles. The flowers, which are produced during July and August, are extremely sweet-scented, pale creamy-yellow, thickly blotched with irregular spots of deep crimson-purple, the markings on the petals and dorsal sepal taking the form of bold transverse bars near the base; the lip is whitish spotted with purple, the hypochil sub-globose, with a deep purple stain over the lower half, the mesochil short two-horned, and the epichil obtuse-angled, rhomboid, obsoletely three-toothed at the end. It is distinguished from *S. tigrina*, which it resembles, by its slightly divided epichil.—*Peru.*

FIG.—Sertum Orch., t. 1; *Flore des Serres*, t. 974; *Puydt, Les Orch.*, t. 42.

S. EBURNEA, *Lindl.*—An old and very handsome species with ivory-white flowers, except a few purple markings on the lip; lip oblong, not constricted at the middle; hypochil two-horned near the base; epichil ovate oblong obtuse; mesochil twice as long, solid, plano-convex, truncated and bidentate in front;

scape pendulous, two-flowered, twice as long as the petals.—*Surinam; British Guiana; Venezuela.*

FIG.—*Bot. Reg.*, t. 1529; *Bot. Mag.*, t. 3359; *Hook. First Cent. Orch. Pl.*, t. 57; *L'Ill. Hort.*, xiv. t. 531 (*spectabilis*); *Maund. Bot.*, iv. t. 176 (*grandiflora*); *Lindenia*, vii. t. 336.

S. ECORNUTA, *Lemaire*.—A very distinct species, differing from the other *Stanhopeas*, as its name denotes, in being devoid of horns to the labellum. It was detected by Warscewicz in 1845. The lip is ovate triangular at the end, very short, somewhat slipper-shaped, light orange-yellow, pure white towards the apex; mottled on the side with purple; sepals and petals pure white with a few purple spots near the base. Flowers about $4\frac{1}{2}$ inches in diameter, produced in pairs.—*Central America.*

FIG.—*Flore des Serres*, t. 181; *Bot. Mag.*, t. 4855; *Parson's Flower Garden*, i. p. 23, f. 20.

S. GIBBOSA, *Rchb. f.*—A very fine and distinct species, flowering in June and July. The plant is in the way of *S. Wardii*, and bears very large flowers, about 6 inches in diameter, and of a dull yellow barred and blotched with dull crimson, this colouring assuming a much darker hue in the sepals; the hypochil is incurved, keeled on each side, the mesochil is furnished with falcate ligulate horns, and the epichil is oblong acute. This plant was well bloomed in 1883 by the late Mr. Peacock, of Hammersmith, and Mr. Wallis, of Balham, who had a plant bearing five spikes of flowers.—*Native country not stated.*

S. GRANDIFLORA, *Lindl.*—A distinct and pleasing species. The plant has ovate furrowed pseudobulbs, broad lanceolate plaited leaves, and short pendent scapes, bearing the very large flowers, which are fully 6 inches in diameter and very fragrant, pure white except a few crimson dots on the basal and middle parts of the lip; the hypochil is roundish, two-horned in front, the mesochil solid truncate hornless but obsoletely tridentate, and the epichil ovate; the column is much elongated. It blooms at different times of the year, and lasts about three days in perfection.—*Trinidad.*

FIG.—*Lodd. Bot. Cab.*, t. 1414; *Maund. Botanist*, iv. t. 176.

SYN.—*Ceratophilus grandiflorus*.

S. GRAVEOLENS, *Lindl.*—A very old species, having been in cultivation as long ago as 1840 in the collection of Dean Herbert. The flowers, which are very strongly scented, are produced usually in pairs; sepals and petals straw-yellow; the hypochil deep apricot-yellow, epichil and horns of mesochil ivory-white.—*Central America.*

FIG.—*Flore des Serres*, tt. 1 & 2.

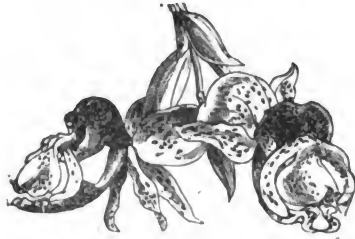
S. GUTTULATA.—See *S. OCULATA*.

S. IMPLICATA.—See *S. MARTIANA*.

S. INSIGNIS, *Frost*.—This is the original *Stanhopea*, and a very handsome plant it is. The pseudobulbs are clustered, ovate, furrowed, with a broadly lanceolate dark green plicate shortly stalked leaf, and a drooping spike of three or four large showy fragrant flowers; the flowers are of a pale dull yellow, whitish or creamy towards the tips, and dotted with purple on the inner face,

the spots being many of them ocellate; the lip is whitish spotted with purple, the hypochil being in addition deeply stained with purple; the hypochil is globose, split in front, the mesochil bears falcate incurved horns, and the epichil is roundish ovate entire; the column is remarkable for its broad winged margin. The flowers are produced in August and September. There is a variety named

FLAVA by Dr. Lindley which has yellowish flowers, and is unusually sweet-scented.—*Brazil*.



STANHOPEA INSIGNIS.

small brown spots on the disk; lip ivory white, having a large number of small purple spots which are arranged in bands. It is said to be allied to *S. churrua*. Sweet scented.—*New Grenada*.

FIG.—*Gard. Chron.*, 3rd ser., 1893, xiv. p. 689, f. 107; *Orchid Review*, i. p. 177, f. 12.

S. MARTIANA, *Batem*.—A magnificent species, quite distinct in character and appearance. The pseudobulbs are ovate and furrowed, the leaves lanceolate plicately venose, and the peduncles two-flowered; the sepals are very pale straw-coloured sparingly marked with small vinous spots, the petals white with larger spots, and a broad blotch of crimson at the base of each, and the lip white; the hypochil is short, scrotiform, the mesochil short with cirrhose horns, the epichil oblong-linear, obscurely three-toothed, and the column pubescent. It blooms during the autumn.—*Mexico*.

FIG.—*Batem. Orch. et Mex. Guat.*, tt. 1, 27; *Bot. Reg.*, 1843, t. 44 (*bicolor*); *Moore. Ill. Orch. Pl. (Stanhopea)*, t. 5; *Flore des Serres*, tt. 2112-3; *Ann. de Gand*, t. 133 (*velata*).

SYN.—*S. implicata*; *S. velata*.

S. MOLIANA, *Rolfe*.—This new species is allied to *S. Ruckeri*, *S. Wardi*, and *S. Haselowiana*. It has yellowish-white sepals irregularly spotted with reddish-purple, some of these spots being ring-shaped; the petals are white with larger spots of a darker tint of the same colour as those on the sepals; the lip is white, the hypochil and the anterior part of the epichil are covered with a number of small reddish-purple spots.—*Peru*.

FIG.—*Lindenia*, vii. t. 331.

S. OCULATA, *Lindl*.—A free-flowering and extremely showy species. It has small ovate furrowed pseudobulbs, each of which bears at the top a large broadly lanceolate nervose leaf, and from the base a peduncle supporting half a dozen large and handsomely spotted blossoms in a drooping raceme; the flowers are of a lemon-yellow, the sepals covered with a large number of lilac spots, often annular, the petals less thickly spotted, the centre yellow, with two or sometimes four large blackish-brown patches on the side of the hypochil, which is elongately boat-shaped, as if unguiculate, the mesochil having two fleshy

horns, and the epichil being ovate entire. There are many varieties, most of which are very sweet-scented. One called **LINDLEYI** has the flowers dull wine-red and but little spotted, and is probably the same as *S. oculata Barkeriana*. The species blooms from July to November.—*Mexico*.

FIG.—*Bot. Mag.*, t. 5300; *Bot. Reg.*, t. 1800; *Lodd. Bot. Cub.*, t. 1764; *Gartenflora* t. 189 (*crocea*); *Lindenia*, vi. t. 256.

SYN.—*Ceratophilus oculatus*; *S. guttulata*.

S. PLATYCERAS, *Rehb. f.*—This handsome plant was first flowered in the collection of the late John Day, Esq., of Tottenham, in 1867. The flowers are deep orange, spotted, and ocellated with purple; hypochil maroon-purple, paler at the base, where it is spotted with purple; mesochil and epichil white or yellowish-white spotted with reddish-purple.—*New Grenada*.

FIG.—*Refug. Bot.*, ii. t. 108; *The Garden*, 1888, xxxiii. p. 534, t. 652.

S. RADIOSA.—See *S. SACCATA*.

S. SACCATA, *Batem.*—A very old species, introduced as far back as 1836. "Flowers greenish-yellow regularly speckled but not blotched with brown; deep yellow at the base, small; sepals and petals turned completely back on the ovary; hypochil very deep and incurved, mesochil reduced to a space sufficient for the development of two broad flat horns; epichil oval three-lobed; bracts shortened."—*Guatemala*.

FIG.—*L'Ill. Hort.*, viii. t. 270.

SYN.—*S. radiosa*.

S. SHUTTLEWORTHII, *Rehb. f.*—A desirable and interesting species, with apricot-coloured flowers having dark purplish blotches at the basilar portions of the sepals, petals, and lip, anterior part of lip yellowish-white; the flowers are produced on a lax pendent raceme. This species was discovered by Mr. Shuttleworth, when collecting for Mr. W. Bull, of Chelsea.—*New Grenada*.

FIG.—*Reichenbachia*, i. t. 35.

S. SPINDLERIANA, *Kränzlin.*—Being the first hybrid *Stanhopea* obtained, this plant is of considerable interest to lovers of this class of plants. It is intermediate between its parents *S. oculata* and *S. tigrina*, and was raised by Herr Weber, head gardener to Herr Spindler, of Spindlersfeld, Germany, to whom it is dedicated. The sepals and petals are greenish-yellow covered with large spots of a purplish-maroon, and one large deep maroon-purple spot at the base of each segment.—*Garden hybrid*.

FIG.—*Gartenflora*, 1890, t. 1335.

S. TIGRINA, *Baleman.*—The handsomest of the species, and the most attractive, whether its strange form, singular markings, or powerful odour are concerned; the latter has been compared to a mixture of Melon and Vanilla. The pseudobulbs are ovate, furrowed, and support a large broadly lanceolate deep green plaited leaf; the peduncle supports a pendent raceme of three or four very large flowers, 8 inches in diameter, deep orange-yellow, the sepals

longitudinally barred and blotched with sanguineous purple, the petals sparingly spotted with the same, and the lip with a roundish yellow hypochil having radiating toothed lamellae within the cavity, a two-horned mesochil, and an oval trifid epichil, the two latter parts whitish spotted with purple. It blooms in July, August, and September.—*Mexico*.



STANHOPEA TIGRINA.

(From the *Gardners' Chronicle*.)

FIG.—*Batem. Orch. Mex. et Guat.*, t. 7; *Bot. Mag.*, t. 4197; *Bot. Reg.*, 1839, t. 1: *Moore, Ill. Orch. Pl. (Stanhopea)*, t. 4; *Flore des Serres*, tt. 713—715 (*superba*); *Hart. Parad.*, i. t. 6; *Hook. First Cent. Orch. Pl.*, t. 56; *Lindenia*, ii. t. 51; *Gard. Chron.*, 3rd ser., 1888, iv. p. 481, f. 69.

SYN.—*Mazillaria lyncea*; *Anguloa Hernandezii*.

S. TIGRINA LUTESCENS, *Williams*.—This is a fine variety, with the very large and handsome flowers of brilliant yellow, inclining to orange, and barred with deep chocolate. It blooms at the same time as *S. tigrina*, and makes a grand plant for exhibition on account of its bold showy flowers.—*Guatemala*; *Chiriqui*; *New Grenada*.

S. TIGRINA NIGRO-VIOLACEA, *Morren*.—This variety has the whole flower deep brown-purple except the edges of the sepals and petals and the upper half of the lip, and is very handsome.

FIG.—*Ann. de Gand*, i. t. 21.

S. VELATA.—See *S. MARTIANA*.

S. WARDII, *Loddiges*.—One of the most beautiful of the species, remarkable for its brilliancy, and for the delicious sweetness of its flowers. It has oblong-ovate furrowed pseudobulbs, broad acuminate plicate leaves, and drooping racemes of several showy flowers, of which the sepals and petals are golden-yellow dotted with purple over great part of their surface, and the lip is pale yellow, with two large dark velvety purple spots on the deep yellow oblong depressed hypochil, reflecting a silvery light as if frosted; the mesochil has two fleshy horns dotted with purple, and the epichil is roundish ovate acute with two semi-terete falcate sub-cirrhose horns, also thickly spotted with purple.—*Guatemala*.



STANHOPEA WARDII.

FIG.—*Sertum Orch.*, t. 20; *Bot. Mag.*, t. 5289; *Knowles & Westc. Floral Cab.*, t. 90; *Vitch's Man. Orch. Pl.*, ix. p. 119.

S. WARDII AUREA, *Lindley*.—A very beautiful variety, resembling the type in its general characters, but having flowers of a deep orange-yellow, the hypochil bearing two dark spots "which are in some manner lost in the flood of yellow that surrounds them"; they are borne during the summer and autumn months. The brilliant colour of the large fragrant blossoms should secure for it a place wherever there is sufficient space.—*Guatemala*.

SYN.—*S. aurea*.

S. WARDII VENUSTA, *Lindl.*—A distinct variety, having the segments entirely orange-yellow without any spots; the hypochil and epichil of the same colour, covered with minute purple dots, as is likewise the whitish column.

FIG.—*Lindenia*, vii. t. 315.

STAUROGLOTTIS.—See *PHALAENOPSIS ROSEA*.

STAUROPSIS.—See *TRICHOGLOTTIS* and *VANDA BATEMANII*.

THRIXSPERMUM.—See SARCOCHILUS.**THUNIA**, *Reichenbach fil.**(Tribe Epidendraceae, subtribe Bleticeae.)*

A small genus of Asiatic Orchids, which are by some authorities included in *Phajus*, from which genus, however, they are readily distinguished by their manner of growth, and by several striking differences, as, for example, their terete leafy stems, which grow in fascicles, their deciduous leaves, and their terminal drooping clusters of flowers provided with large membranaceous bracts. The structure of the flowers very closely resembles that of *Phajus*. Reichenbach refers the genus to the tribe *Arethuseae*, and sums up the distinctions between it and *Phajus*, in these words:—" *Thunias* have a terminal inflorescence on the leafy shoots when *Phajuses* have their inflorescences and their fascicles of leaves apart. *Thunias* have fleshy membranaceous leaves, *Phajuses* have plaited ones. *Thunias* have persistent, *Phajuses* deciduous bracts. *Thunias* have four, *Phajuses* eight pollen masses. *Phajus* flowers get blue when dried, *Thunias* keep white or get brownish. You can make cuttings of *Thunias* as of a *Dracaena*, try it with *Phajuses*!" There are some four or five species found in the Himalayas and in Burmah.

Culture.—The plants belonging to this genus should be grown in the East Indian house, and be treated liberally with water. They will grow upon blocks, but pot culture is much the best. In potting *Thunias*, the drainage provided should be perfect, and the potting material should be rough peat and sphagnum in about equal parts. A good mixture of peat, fibrous loam, and silver sand is preferable, as in this compost the stems become more robust. After the flowers are past and the leaves have fallen, water should be entirely withheld, and they should be removed to a lower temperature. These plants when growing enjoy an abundance of sunshine. As soon as they begin to show signs of growth, about the beginning of March, they should be potted, and as soon as the young roots appear water should be given them sparingly. *Thunias* may be propagated by division, and also by cutting up the old stems into pieces about 6 inches long, and inserting them in a pot in the same manner as ordinary cuttings. This latter operation should be effected just when the young growths are complete.

T. ALBA, *Rehb. f.*—The stems of this handsome species are terete, usually about 2 feet high, clothed throughout with leaves, the lower ones, produced when the stem first begins to lengthen, broad, round, amplexicaul and scale-like, the upper ones also stem-clasping, oblong-lanceolate acute, some 6 or 8 inches long, glaucous beneath, falling during the resting season so as to leave the slender terete stems naked; the flowers are produced on a short dense terminal nodding raceme just as growth is finished; the sepals and petals are pure white, oblong-lanceolate, acute, and nearly equal; and the lip is oblong-cucullate, rounded at the apex, where it is denticulated, white, beautifully pencilled over the disk and front portion with purple and lilac. The plant under consideration should be potted in good fibrous peat and sphagnum, and during the growing season be kept in the East Indian house; but after the flowers are faded, water must be gradually diminished until it is entirely withheld, when the cool house will suit it best; care must, however, be taken to prevent its shrivelling while at rest. It blooms during July and August.—*Northern India; Burmah.*

FIG.—*Bot. Mag.*, t. 3991; *Bot. Reg.*, 1838, t. 33; *Paxton, Mag. Bot.*, v. p. 125, with tab.; *Wallich, Pl. Asiat. Rar.*, t. 198; *Knowles & Westc. Floral Cab.*, t. 125.

SYN.—*Phajus albus*.

T. BENSONIAE, *Hook. f.*—A beautiful species, with the habit and general appearance of *T. alba*. The stems are erect, leafy, terete, fascicled, from 1 to 2 feet in height, their lower parts clothed with broad roundish reflexed leafy sheaths, which pass upwards into the true leaves; these are distichous, from 6 to 10 inches long, green above, slightly glaucous beneath; the flowers are large, measuring some 2 or 3 inches across, and produced like those of *T. alba*, just when growth is finished, from the top of the stem in a short scarcely drooping raceme; the sepals and petals are spreading, oblong-lanceolate, $2\frac{1}{2}$ inches long, open, bright magenta, becoming white towards the base; and the lip is large, open, the side lobes rolled over the column, magenta in front, white at the base, the central lobe oblong, closely frilled at the edge, of a rich deep magenta-purple, the crests forming a broad oblong patch of yellow frilled keels occupying the disk. It flowers in June, and makes a fine plant for exhibition. We have seen as many as eighteen flowers on a spike.—*Mountains of Moulemein.*

FIG.—*Bot. Mag.*, t. 5694; *Jennings, Orch.*, t. 35; *Orchid Album*, ii. t. 67.

T. CANDIDISSIMA, *Rehb. f.*—This new species is described by Reichenbach as having the habit and appearance of *T. Marshalliana*. It has a nodding inflorescence of about 6 flowers; the spur is inflated and bilobed as in *T. Marshalliana*, the trifid lip having the anterior edges of the side lobes toothed, the mid lobe has filiform processes, and there are also a few similar processes on the disk; the sepals and petals are white, and the throat is without any yellow colour. It was first flowered by Sir Trevor Lawrence, Bart., who found it on an imported plant of *Dendrobium Wardianum*.—*Burmah.*

T. DODGSONIANA, *Williams.*—A handsome and distinct species, with erect terete stems, and oblong-lanceolate acute nervose stem-clasping bright green leaves. The flowers are produced in terminal drooping racemes, like those of *T. alba*, which the plant resembles in its general aspect, the oblong-lanceolate

acute sepals and petals being pure white, and the lip, which is denticulate in front, is sulphury-white outside, yellow within, the throat freely striped with crimson. The lateral sepals are produced backwards, so as to form a short blunt chin or incipient spur. This plant was exhibited by us at the Royal Horticultural Society's Meeting in August, 1871, and was awarded a first-class certificate.—*India*.

FIG.—*Floral Mag.*, 2nd ser., t. 329.

SYN.—*Phajus Dodgsoni*.

T. MARSHALLIANA, *Rehb. f.*—A lovely species of free-growing character. The reed-like stems are erect terete and leafy, as in the other cultivated species,



THUNIA MARSHALLIANA.

and the leaves are oblong-lanceolate acuminate, 6 inches long, semi-amplectant, distichous, pale green, glaucous beneath. The flowers, which are produced in June and July, are large, white, with the lanceolate-oblong acute spreading sepals and petals $2\frac{1}{2}$ inches long, and the lip white, with the lower part convolute around the column, streaked with yellow and purple on the upper side near the front, and produced behind into a retuse falcate spur. the front part spread out, roundish, golden-yellow, with numerous forking veins of deep orange-red covering the whole surface except the extreme edge, which is white and beautifully frilled; the disk bears five yellow raised veins and five shorter ones on each side, all pectinately fringed with crystalline hairs. It continues to throw

fresh flowers for a long time, and makes a good exhibition plant, being so distinct from any other Orchid.—*Moulmein*.

FIG.—*Orchid Album*, iii. t. 130; *Gartenflora*, t. 1098; *Lindenia*, iv. t. 189.

T. MARSHALLIANA IONOPHLEBIA, *Rehb. f.*—A distinct form of this beautiful species, having a "sulphur-coloured disk and crest of lip, and rose veins to the apex, disk more orange." It was flowered by Mr. W. Bull, of Chelsea.

T. MARSHALLIANA PURPURATA, *Rehb. f.*—A very fine variety, "the superior half of the lip being pure white, and having five yellow keels on the disk; the anterior portion has numerous bright purple nervations outside, namely, on the sides, covered with yellow filiform processes; the middle is nearly white with very numerous yellow filiform processes; the fringed and

wavy border is of the purest white, which affords an admirable contrast to the large purple spots, the numerous purple nervations giving the effect of spots at the distance." This novelty was communicated to us by W. E. Brymer, Esq., Dorchester.—*Burmah*.

T. MARSHALLIANA *Rehb. f.*—A superb variety, first flowered by ourselves in 1888; the flowers are large; sepals and petals pure white, with an abruptly trilobed lip, which has dark reddish-brown veins, and twelve darker rows of processes or crests.

T. MASTERSIANA *Kränzlin*.—This new species is described by Dr. Kränzlin as being exceedingly handsome, of strong robust habit; the stems immediately above the ground are as thick as the thumb, and more than 4 feet in height, with glaucous densely crowded distichous leaves, 10 to 12 inches long, nearly 2 inches broad; in general appearance the plant is more like a palm than any other *Thunia*. "It is, of course, nearly allied to *T. alba*, and perhaps even more closely to *T. pulchra*, but it differs from both; the flowers are scarcely half the size of the two allied species, the labellum is more campanulate, only the extreme margin is revolute." Named in honour of Dr. Maxwell T. Masters, F.R.S.—*Moulmein*.

T. NIVALIS *Hort.*—This plant, which resembles *T. alba*, has erect terete stems, seldom exceeding 18 inches in height, and furnished with glaucous distichous leaves, about 6 inches in length, which fall off during the resting season. The flowers are produced on a short raceme from the apex of the stem, each cluster containing some five or six pure white blossoms.—*Sylhet*.

T. VEITCHIANA *Rehb. f.*—This plant, which has for some time been known to us under the name of *T. Wrigleyana*, was, we believe, first raised and flowered by the late Mr. Geo. Toll, of Manchester, who named it after E. G. Wrigley, Esq., and subsequently sold us the stock. Since then it has been exhibited by Messrs. Veitch & Sons under the name of *T. Veitchiana*, at the same time as exhibited by us under the name of *T. Wrigleyana*, at the Royal Botanic Society's Show, in May, 1885. It is a hybrid between *T. Bensonias* and *T. Marshalliana*; the sepals and petals are white, just tinged with mauve at their tips, the keels of the disk are of a peculiar orange-purple, the anterior part of the lip is fine mauve-purple, and the superior portion of the lip white, with some mauve-purple veins.—*Garden hybrid*.

FIG.—*Orchid Album*, vii. t. 326.

SYN.—*T. Wrigleyana*.

T. WRIGLEYANA.—See *T. VEITCHIANA*.

TRICHOCENTRUM, Poeppig et Endlicher.

(Tribe Vandeeae, subtribe Oncidieae.)

This is a small genus of dwarf epiphytes, with small monophyllous pseudobulbs, and radical scapes, bearing one or two flowers of medium size. Many of the species are interesting only from a botanical point of

view; there are, however, some few exceptions to this rule, of which the species here quoted are examples. They have free spreading sepals and petals, and a lip which is connate with the base of the column into a pitcher, and is produced into a longish spur, the middle lobe being flattened out, broadly two-lobed, and much longer than the sepals. Eight species are recorded from Brazil and Central America.

Culture.—These plants should be grown on a block, or in a small basket, and treated to a moderately warm temperature; care must especially be taken that no stagnant water remains about their roots.

T. ALBO-PURPUREUM, *Linden et Rehb. f.*—A pretty dwarf epiphyte, having minute ovoid monophyllous pseudobulbs growing in tufts, and sessile oblong acute shining green leaves, 4 to 6 inches long, the one-flowered peduncles springing from the base of the bulbs. The flowers are large for the size of the plant, and freely produced; the cuneate oblong sepals and the more oblong petals are of a bright cinnamon-brown inside, tawny-yellow outside; while the lip is large, projected forwards, pandurate, broad and bilobed in front, white with two large purple spots near the base, the disk veined with rosy-purple passing to yellow, and having a crest of four rosy-purple keels. It should be grown at the cool end of the *Cattleya* house.—*North Brazil.*



TRICHOCENTRUM ALBO-PURPUREUM.

FIG.—*Bot. Mag.*, t. 5688; *Orchid Album*, v. t. 204; *Gard. Chron.*, 1866, p. 219. with fig.; *Journ. of Hort.*, 1887, xiv. p. 27, f. 5.

T. FUSCUM, *Lindl.*—This is a pretty and interesting species, yet it is one of the least beautiful in this genus. It however does not occupy much space, and is worthy a place in a large collection, on account of the season at which its blooms are produced. Leaves oblong, obtuse, thick and fleshy in texture, some 6 inches long, and deep green. Flowers produced singly on short peduncles, sepals and petals narrowly oblong, nearly equal, of a uniform brownish-green; lip oblong, anterior lobe notched in front, white with a few lines of yellow on the disk, side lobes small, erect, white streaked at the base with pale crimson. Flowers during the autumn and winter months.—*Brazil.*

FIG.—*Bot. Mag.*, t. 3969; *Bot. Reg.*, t. 1951.

T. ORTHOPLECTRON, *Rchb. f.*—A curious and beautiful epiphyte, of dwarf habit. The flowers are large; the cuneate-oblong sepals and petals are light cinnamon-brown, tipped with yellow, and the lip is large, sub-quadrate, emarginate, blunt-angled, white, with a crimson-lake blotch on each side of the base, and five bars or semi-abortive keels of the same colour between the blotches, the disk in front of the crest being yellow. The spur is straight and tapered off to an acute point. It flowers in October, and was exhibited by W. Lee, Esq., Downside, Leatherhead, at the Royal Horticultural Society's Meeting in October, 1883.—*South America*.

FIG.—*Orchid Album*, vi. t. 272.

T. PFAVII, *Rchb. f.*—A pretty little Orchid, collected by Herr Pfau in Central America. "The sepals and petals are spatulate, blunt, half brown, half white; the lip is cuneate, flabellate bilobed crisped, white with a red blotch on the middle of the stalk, which gives it a very elegant appearance; there are two acuminate spreading teeth on the stalk."—*Central America*.

FIG.—*Gard. Chron.*, N.S., 1882, xvii. p. 117, f. 21; *L'Ill. Hort.*, xxxiii. t. 587; *Gartenflora*, t. 1103.

T. PORPHYRIO, *Rchb. f.*—A very handsome species, with dwarf scarcely pseudobulbous stems, cuneate-oblong leaves, and peduncles bearing each a solitary flower about 2 inches in diameter; the sepals and petals are cuneate-oblong, acute, brown margined and tipped unequally with yellow; the lip is pandurately flabellate, emarginate, of a rich magenta-purple, faintly margined with white towards the point, and having a rectangular sulphur-yellow blotch on the disk in front of the three purple lines of the crest; the spur is bent and attenuated, and the column bears falcate auricles.—*South America*.

FIG.—*L'Ill. Hort.*, 1884, xxxi. t. 508.

T. TIGRINUM, *Linden et Rchb. f.*—A remarkably handsome and desirable species, which produces its blossoms while in a very small state. Its oblong foliage reminds one of a miniature *Oncidium Lanceanum*, being more or less dotted with deep red. The peduncles are produced from the base of the leaves, and bear one or two sweet scented flowers, of which the ligulate-lanceolate sepals and petals are greenish-yellow, transversely barred and distinctly spotted with purplish-brown; and the lip, which is very large in comparison to the size of the flower— $1\frac{1}{2}$ inch long, and nearly 2 inches across the dilated apex—is broadly cuneiform, deeply bilobed, pure white, with a yellow crest on the disk, and on each side at the base a wedge-shaped blotch of purple. A variety named **SPLENDENS** has larger and more intensely coloured flowers.—*Ecuador*.

FIG.—*L'Ill. Hort.*, 3rd ser., t. 282; *Lindenia*, i. t. 24 (var. *splendens*); *Orchid Album*, xi. t. 484.

T. TRIQUETRUM, *Rolfe*.—A distinct and pretty little species, with equitant leaves about 6 inches long, tapering, scape about an inch long, one-flowered; sepals and petals pale straw colour; lip trumpet-shaped, straw-coloured, spotted or blotched with orange.—*Peru*.

FIG.—*Lindenia*, vii. t. 311.

TRICHOGLOTTIS, Blume.

(Tribe Vandeeae, subtribe Sarcantheeae.)

A small genus of epiphytal Orchids, with elongate leafy stems, distichous leaves, and lateral peduncles bearing few-flowered short racemes, or sometimes solitary flowers. The group is closely allied to *Sarcochilus*, from which it differs mainly in not having a fleshy lip. The species, of which about half a dozen are known, inhabit the Malay Archipelago.

Culture.—The plants require the same treatment as *Aërides*, *Vanda*, and other genera of the same bulbous character.

T. COCHLEARIS, *Rehb. f.*—A rare species, introduced in 1883 by Messrs. J. Veitch & Sons. In habit it somewhat resembles a dwarf *Vanda*, growing to a height of about 8 or 9 inches; the leaves are thick, channelled, unequally bilobed at the apex; the scapes are produced from the axils of the upper leaves, short four-flowered; flowers smaller than those of *Saccolabium violaceum*; the sepals and petals white barred transversely with purple; lip scoop-shaped, white blotched with purple.—*Sumatra*.

FIG.—*Journ. of Hort.*, 1886, xii. p. 194, f. 34; *Id.*, 1893, xxvi. p. 233, f. 47.

T. FASCIATA, *Rehb. f.*—A rather showy species of free-growing habit, with stoutish rooting stems attaining a moderate height, furnished with distichous oblong obtuse apiculate leaves, 3 inches long, sheathing the stem at the base, and bearing lateral spikes of rather large leathery flowers, suggestive of those of *Phalaenopsis sumatrana*, few in number, but rather effective from their distinctly banded coloration. These flowers have trigonous peduncles and pedicels, cuneate oblong acute sepals and petals, the lateral sepals falcate, all white externally, pale greenish-yellow inside closely marked with transverse bars of cinnamon-brown; and a curiously-shaped lip, which has dolabriform basal auricles and a trifid blade, with the side lobes triangular and spreading and the middle lobe keeled, obliquely obtuse in front—the lip whitish, with the side lobes yellow at the tip, and the keel with a few purplish spots beneath; the dolabriform auricles have three velvety lines between them.—*Eastern Tropical Asia*.



TRICHOGLOTTIS FASCIATA.

FIG.—*Orchid Album*, v. t. 208; *L'Orchidophile*, 1885, p. 282.

SYN.—*Stauroopsis fasciata*.

TRICHOPILIA, Lindley.

(Tribe Vandeeae, subtribe Oncidieae.)

This genus contains some very handsome and distinct-looking dwarf evergreen plants. They have monophyllous pseudobulbs, fleshy erect leaves, and deflexed scapes springing from the rhizome below the leaves, usually one or two-flowered, but sometimes producing four or five flowers, which are not only curious in form but also of a showy character. They have free narrow erecto-patent sepals and petals, and a large lip whose claw is adnate to the column, which it closely invests above, the limb being spreading, the slightly dilated lateral lobes connivent, and the middle lobe continuous and undulated. The anther-bed is usually ciliato-fimbriate. Bentham records sixteen species as growing in Colombia, Central America, and Mexico.

Culture.—The *Trichopilias* are best grown in pots, with peat and good drainage, and should be well elevated above the rim of the pot on account of their deflexed flower scapes, which proceed from the base of the bulbs. Too much water at the root at any time is highly injurious to them. They will do best in the Mexican house, kept as near the glass as possible, so that the bulbs may become well matured, which induces them to bloom more freely. They are propagated by dividing the plant.

T. BREVIS, Rolfe.—A very pretty novelty, imported about three years ago by the Horticulture Internationale. Pseudobulbs cylindro-conical, from 3 to 5 inches long, the young growths producing a solitary elliptic lanceolate acute leaf about 6 inches long; scapes two- or three-flowered, produced from the base of the growths; the sepals and petals are linear-lanceolate acute, subequal, greenish-yellow, with a few chocolate-brown blotches; lip campanulate, white, slightly flushed and veined with yellow on the front lobe and disk.—*Peru*.

FIG.—*Lindenia*, vii. t. 332.

T. CANDIDA.—See *PILUMNA FRAGRANS*.

T. COCCINEA.—See *T. MARGINATA*.

T. CRISPA, Lindl.—A charming and very rare species, resembling *T. marginata* in its habit and foliage, but more robust, the pseudobulbs being larger; the drooping peduncles are produced from the base of the bulbs, and bear two or three large flowers on each; the sepals and petals are crispato-crenate along the whole margin, light cherry crimson, faintly edged with white and the lip is large, white outside, somewhat deeper in colour than the sepals, the margin irregularly but strongly crisped, and the throat a rich deep crimson.

It blooms during April, May, and June, and lasts about two weeks in perfection. The plant requires to be grown in a pot, and should be elevated 3 inches above the rim, in order to show off the flowers, which are drooping, to the greatest advantage. R. Warner, Esq., of Chelmsford, exhibited a fine specimen of this



TRICHOPILIA CRISPA.

plant, with upwards of a hundred flowers, at the St. Petersburg International Exhibition in 1869. This plant has the peculiarity of producing two crops of flowers from the same pseudobulbs every year; as soon as one lot goes off the other appears.—*Central America*.

FIG.—*Batem. Second Cent. Orch. Pl.*, t. 115; *Bot. Mag.*, t. 4857 (*coccinea*); *Flore des Serres*, t. 1490 (*coccinea*).

T. CRISPA MARGINATA, R. Warner.—A decided acquisition to a very pretty genus. It is a finer plant than *T. crispa*, and will prove extremely useful for exhibition purposes, as it flowers during June and July. It resembles *T. marginata* in its growth, but has shorter and more ovate compressed pseudobulbs; the leaves are broadly lanceolate, recurved at the apex, dark green; and the peduncles, which are produced from the base of the bulbs each bear two or three blossoms, which are large and very showy; the sepals and petals are linear lanceolate, crispy at the margin, of a pale purplish red, white at the edges; and the lip is white externally, funnel-shaped, the two rounded lateral lobes meeting over the throat, and the dilated central lobe deeply cleft at the apex, dull crimson, with the throat of a darker and richer crimson, the limb narrowly edged with white. This was first flowered in Mr. Warner's collection, and is, without doubt, the finest of all the *Trichopilias*.—*Central America*.

FIG.—Warner, *Sel. Orch. Pl.*, i. t. 5; Puydt, *Les Orch.*, t. 43; *Flore des Serres*, tt. 1925-6.

T. FRAGRANS.—See *PILUMNA FRAGRANS*.

T. FRAGRANS NOBILIS.—See *PILUMNA NOBILIS*.

T. GALEOTTIANA, *A. Richard.*—A distinct free-blooming and pretty plant, with tall ligulate ancipitous pale green pseudobulbs, solitary cuneate oblong acute dark green leaves, and abundant flowers on one-flowered peduncles; the sepals and petals are cuneato-lanceolate acute, the petals somewhat broader, pale green, with a central bar of olive-brown; and the lip is closely folded round the column, dilated and spreading in front, three-lobed, the lateral lobes rounded, the front lobe ob-reniform, the disk pale yellow with bars and lines of crimson-purple, the margin passing to white. It blossoms in August and September, and continues for a fortnight in good condition. It requires cool treatment, and should be potted in peat and sphagnum.—*Mexico: Chiapas.*

FIG.—*L'ill. Hort.*, t. 225 (*picta*); *Bot. Mag.*, t. 5550 (*turalbae*); *Batem. Second Cent. Orch. Pl.*, t. 162 (*turalbae*).

SYN.—*T. picta*; *T. turalbae*, Batem. non Rehb.

T. HYMENANTHA, *Rehb. f.*—A very distinct and curious plant, producing thick fleshy elongate ensiform acuminate leaves, narrowed also to the base, where they are terete and clothed with close-fitting brown scales, the lower part representing a stem or pseudobulb. The flowers are small, in six- or eight-flowered drooping racemes, on peduncles issuing from the axils of the stem sheaths; they are white, with the sepals and petals lanceolate and slightly twisted, and the lip sessile, broadly elliptic, nearly flat, with erose edges, speckled with deep sanguineous purple towards the base and sides. It flowers during the summer months.—*New Grenada.*

FIG.—*Bot. Mag.*, t. 5949; *Xenia Orch.*, i. t. 7; *Orchid Album*, x. t. 479.

T. LAXA.—See *PILUMNA LAXA*.

T. LEHMANNI.—See *PILUMNA LEHMANNI*.

T. LEPIDA.—See *T. MARGINATA LEPIDA*.

T. MARGINATA, *Henfrey.*—A very pretty and distinct species, with clustered oblong furrowed ancipitous pseudobulbs, bearing above the solitary lanceolate shortly acuminate dark green coriaceous leaves, recurved at the tip, and from their base the drooping one-flowered peduncles. The flowers are large, 4 to 5 inches in expanse, with a bold prominent lip; the sepals and petals are narrow, linear-lanceolate acuminate, once twisted, brownish red with greenish-yellow margins, and the lip is trumpet-shaped, white on the outside, the mouth spreading, three-lobed, the lateral lobes roundish and the central one emarginate, wavy, of a reddish purple, sometimes edged with white, becoming deep crimson in the throat, or with the limb white and the throat only deep crimson; the margin of the anther-bed is very finely serrulate. It produces its blossoms in May and June, lasting three weeks in beauty. Of this plant there are many varieties. One called **OLIVACEA**, *Rehb. f.*, has the sepals and petals of an olivaceous hue.—*Central America.*

FIG.—*Purton, Fl. Gard.*, ii. t. 54; *Gard. Mag. Bot.*, iii. p. 185, with tab.; *Lemaire, Jard. Fl.*, t. 184.

SYN.—*T. coccinea*.

T. MARGINATA LEPIDA, Veitch.—A very rare and handsome variety, somewhat resembling *T. crispata* in growth. The pseudobulbs are oblong obtuse-ancipitous, with solitary oblong ovate acute leathery leaves, and deflexed peduncles, bearing large handsome flowers, which are from 4 to 5 inches in diameter, with a prominent fimbriated lip; the sepals and petals are linear lanceolate acute, pale rosy lilac, irregularly margined with white; and the lip, which is closely folded at the base, is expanded quadrate-oblong in front, of a deep purple crimson with an irregular margin of white about $\frac{1}{4}$ inch wide, the lateral lobes broad and rounded, the central one deeply cleft into two rotundate undulated segments. It flowers during the spring months.—*Costa Rica*.

FIG.—*Floral Mag.*, 2nd ser., t. 98; *Orchid Album*, v. t. 197 (*T. lepidata*).

SYN.—*T. lepidata*.

T. PICTA.—See *T. GALEOTTIANA*.

T. PUNCTATA, Rolfe.—A pretty little species, imported in 1890 by Messrs. F. Sander & Co. Mr. Rolfe says it is allied to *T. laza*, but differs from that and from every other species in having the sepals and petals covered with numerous reddish-purple spots on a light green ground; lip greenish-white.—*Costa Rica*.

T. SANGUINOLENTA.—See *HELCIA SANGUINOLENTA*.

T. SUAVIS, Lindl.—A fine species, the thin almost foliaceous pseudobulbs and broad leaves of which very much resemble those of *Odontoglossum grande*. The pseudobulbs are monophyllous, oblong obcordate, ancipitous, clustered; the leaves are large and broad, oblong acute wavy and nearly sessile, and the peduncles three- or four-flowered; the flowers are white or creamy white, the lip yellow in the throat, spotted with pale violet rose on the front part and on the sides; the sepals and petals are lanceolate acute narrowed to the base, scarcely twisted, the lip closely rolled up at the base, spread out in a funnel-shaped form, and three-lobed in front, the middle lobe being large and emarginate, and the entire edge being minutely crenulate and undulated. The flowers give out a most delicate odour of hawthorn. It blooms in March or April, lasting about two weeks in perfection, and is best grown in the cool-house.—*Costa Rica*.

FIG.—*Bot. Mag.*, t. 4654; *Batem. Second Cent. Orch. Pl.*, t. 143; *Parson, Fl. Gard.*, i. t. 11; *Flore des Serres*, t. 761; *Lemaire, Jard. Fl.*, t. 227; *Warner, Sel. Orch. Pl.*, iii. t. 8; *Puydt, Les Orch.*, t. 44 (*Lamarchae*); *Revue Hort.*, 1887, p. 454, f. 91; *Veitch's Man. Orch. Pl.*, ix. p. 185.

T. SUAVIS ALBA, Hort.—A pure white form of this old favourite, which Dr. Lindley calls "a delicious Orchid." It has the sepals and petals pure white, and the lip white with a yellow stain in the throat. It blossoms during May and June, and lasts about two weeks in perfection.—*Central America*.

FIG.—*Orchid Album*, i. t. 14; *Lindenia*, i. t. 2; *Reichenbachia*, i. t. 31.

T. SUAVIS GRANDIFLORA, Hort.—A lovely variety of this really handsome Orchid. The pseudobulbs and leaves are very large. The flowers expand very much better than those of the type, and are also more highly coloured; the sepals and petals are white, and the lip, which is upwards of 3 inches in diameter, is white, with large rich crimson spots, the throat deep orange.—*Central America*.

T. TORTILIS, *Lindl.*—A pretty and interesting species on account of the peculiar corkscrew-like sepals and petals. The pseudobulbs are oblong or ligulate, compressed, 2 to 4 inches long, monophyllous, the leaf being oblong acute coriaceous, and the peduncles solitary and single-flowered. The drooping flowers are large and attractive, the sepals and petals narrow lanceolate, spirally twisted, yellowish green with lurid brownish-purple blotches along the middle part, and the lip white outside, yellowish-white or white within, spotted thickly with rose colour and blotched with yellow about the throat, the base closely rolled in, the front part spreading out and three-lobed, the rounded lateral lobes meeting as usual over the throat, the front flattened-out lobe two-cleft. It produces its flowers freely at various times of the year, and lasts two or three weeks in beauty. There are different varieties of this plant, one with much brighter-coloured flowers, and one with white flowers—the var. **CANDIDA**, *Linden et Rehb. f.*, imported from Chiapas by M. Linden.—*Mexico*.

FIG.—*Bot. Mag.*, t. 3739; *Bot. Reg.*, t. 1863; *Maund, Botanist*, iii. t. 122; *Knowles & Westc., Floral Cab.*, t. 101; *Hook. First Cent. Orch. Pl.*, t. 75; *Orchid Album*, viii. t. 349.

TRICHOSMA, *Lindley*.

(Tribe Epidendreae, subtribe Coelogyneae.)

A small Indian genus consisting of a single epiphytal species, with the habit of *Coelogyne*, having clustered two-leaved stems, sub-plicate somewhat fleshy leaves, and terminal racemes of largish flowers, of which the sepals and petals are spreading, and an articulated broadly three-lobed lip.

Culture.—This plant should be grown in a pot with rough fibrous peat and good drainage; when in active growth it must be kept moderately moist, it should never be allowed to get dry, as it has no thick fleshy pseudobulbs to support it.

T. SUAVIS, *Lindl.*—A very distinct and scarce plant, having thin tufted terete stems 8 or 10 inches high, furnished with two broadly lanceolate obsolete three-nerved leaves, and bearing short terminal racemes of fragrant flowers; the sepals and petals are lanceolate, creamy white, and the lip has a three-lobed limb, the side lobes white striped with brownish-crimson, the middle lobe undulated, recurved, yellow margined with crimson, and bearing several crispy crests on the disk. It flowers during the spring months.—*Khasia Mountains*.

FIG.—*Bot. Reg.*, 1842, t. 21; *Orchid Album*, iii. t. 114.

SYN.—*Eria suavis*; *E. coronaria*; *Coelogyne coronaria*.

TRIGONIDIUM.—See LAELIA MONOPHYLLA.

UROPEDIUM, *Lindley*.*(Tribe Cypripedieae.)*

This genus contains but one species, a very interesting plant, agreeing entirely with the *Selenipedium* group of *Cypripedium* except as regards the character of the lip, which, instead of taking the form of a pouch or slipper, is like the petals, that is to say, long and caudate with the flat base slightly broader and concave. The only species is a native of Colombia.

Culture.—Though not very showy, this plant is well worth growing on account of its peculiarly-shaped blossoms; and it is by no means a difficult plant to cultivate, if it gets the treatment it requires. We have found it to do best potted in a mixture of loam, peat, and sand, with good drainage. The plant should be placed just below the rim of the pot, and watered liberally at the roots during the growing season, which is nearly all the year. It requires but little rest, for having no fleshy bulbs to support it, a certain degree of moisture is necessary at the roots, even when it is comparatively at rest. After the growth is completed it will begin to show flower, and then care should be taken that it does not get dry at the root, for it requires a good quantity of nourishment to bring its flowers to perfection. We have seen this plant shrivelled when the blossoms have been showing, and from this cause they have been nearly spoiled and the plant injured. If this species is allowed to get into an unhealthy state it is a long time before it recovers; it blooms during the summer months, and lasts some time in beauty. Propagation is effected by dividing the plant when it has done growing, or just as it begins to push.

U. LINDENI, *Lindl.*—A monotypic plant of much interest on account of the singular structure of its flowers. It forms a distichous tuft of erect leathery ligulate obtuse pale green leaves, about 10 inches in length, resembling those of *Cypripedium caudatum*, the branching two-flowered velvety scape growing up a foot high or more from the centre of the leaves; the blossoms, which are produced from the loose spathaceous bracts, are large and singular in shape; the sepals are broad oval lanceolate with wavy edges, white with green veins, the linear-ligulate petals, and the lip which is oblong lanceolate at the base, are velvety white streaked with green at the base, the points being lengthened out into purplish-red tail-like appendages, which frequently attain as much as 2 feet in length. It flowers in May.—*New Grenada*.

FIG.—*Pescatorea*, t. 2; *Xenia Orch.*, i. t. 15; *Flore des Serres*, vi. p. 123, with fig.; *Belg. Hort.*, 1854, p. 193, with tab.; *Gartenflora*, t. 315; *L'Orchidophile*, 1893, p. 80.

VANDA, R. Brown.

(Tribe Vandeeae, subtribe Sarcantheeae.)

This genus contains a number of magnificent species ; indeed, there are not many Orchidaceous plants that surpass *Vandas* in the beauty of their foliage and flowers. What more beautiful picture can there be than an Orchid-house with flowering *Vandas*, and what more delightful than the atmosphere of such a structure filled with their delicious fragrance ? Their habit of growth is the same as that of *Aërides* and *Saccolabium*, that is to say, they have erect leafy stems, the leaves being evergreen, usually channelled, distichous and leathery, often long and gracefully decurved, praemorse or bilobed, sometimes though rarely terete ; the peduncles are lateral, produced from the axils of the leaves, and the flowers, which are gaily coloured, fleshy in texture and usually very fragrant, are collected into loose racemes. The flowers have free sub-equal much spreading sepals and petals, and a lip which is continuous with the base of the column, saccate or obtusely spurred, the lateral lobes erect, the middle lobe spreading oblong. About twenty species are referred to this genus, mostly natives of Tropical India and the Malay Archipelago.

Culture.—They require the same treatment as *Aërides*, except that they require but little shade—the less they have the better they will flower. They will blossom two or three times during the year when treated in this way. Propagation is effected by taking off the young growths which spring from near the base of the stem, or by cutting the stem as directed in the case of *Aërides*.

V. AMESIANA, *Rehbb. f.*—A handsome and charming *Vanda*, which was first imported with a quantity of other Orchids from India. It is a dwarf-growing evergreen and free-flowering species, producing distichous ligulate acute deep green leaves ; the scape is erect carrying numerous delicately coloured and very fragrant flowers ; sepals and petals nearly equal, flat and spreading, white suffused with a delicate blush ; lip deep rose margined with pale rose. It was dedicated to the late Hon. F. L. Ames, of North Easton, U.S.A. The flowers, which are produced in May and June, last several weeks in beauty.—*Shan States ; India*.

FIG.—*Orchid Album*, vii. t. 296 ; *Bot. Mag.*, t. 7139 ; *Journ. of Hort.*, 1889, xviii. p. 103, f. 18.

V. AMESIANA ALBA, *Hort.*—This chaste variety of this beautiful plant, flowered in the Victoria and Paradise Nurseries in 1889, having pure white flowers.

V. ARBUTHNOTIANA, *Kränzlin*.—A species introduced by Messrs. F. Sander & Co., and said to be allied to *V. serrulata* and *V. Roxburghii*. The leaves are thinner than those of other *Vandas*, two-lobed at the apex; the flowers measure $2\frac{1}{2}$ inches from tip of dorsal sepal to base of lateral, and $1\frac{1}{2}$ inch across, and are golden-yellow striped transversely with purple; mid-lobe of lip pandurate. It first flowered with W. N. Arbuthnot, Esq., of Bexley, to whom it is dedicated.—*Malabar, India*.

V. BATEMANII, *Lindl.*—A noble and stately plant of upright growth, the stout stem clothed with distichous leathery lorate leaves which are obtuse and obliquely emarginate at the tip, and of a pale green colour. The long erect scapes are axillary, and bear many large spreading flowers, of which the sepals and petals are thick and fleshy, falcate, obtusely obovate ensiform, yellow spotted with crimson in front, rosy-purple at the back, fading to violet at the edge; and the lip is triangular saccate at the base, and of a purple-crimson colour, the front part furrowed and incurved, the disk bearing an elevated tooth, and its base a short transverse crest. It blooms in July, August, and September, and continues blooming for three months.—*Philippine Islands; Moluccas, Malay Archipelago*.

FIG.—*Bot. Reg.*, 1846, t. 59; *Moore, Ill. Orch. Pl. (Vanda)*, t. 1; *Flore des Serres*, tt. 1921-2; *Gaudichaud, Freyc. Voy.*, t. 36.

SYN.—*V. lissochiloides*; *Ficldia lissochiloides*; *Stauropsis lissochiloides*.

V. BENSONI, *Batem.*—A very elegant addition to this beautiful genus, and allied to *V. Roxburghii*. It is a free-growing plant a foot or more in height, producing distichous channelled leathery lorate leaves, which are unequally toothed at the apex, and erect rigid scapes $1\frac{1}{2}$ foot long from the base of the shoots; the flowers are about 2 inches in diameter, white on the outside, the sepals and the smaller petals obovate obtuse, yellowish-green, dotted, not tessellated, with reddish-brown on the inside, and the lip ovate in front, convex, trilamellate on the disk, pink, with a kidney-shaped bifid violet-coloured apex, the small basal auricles and conical spur white.—*Rangoon*.

FIG.—*Bot. Mag.*, t. 5611; *Batem, Second Cent. Orch. Pl.*, t. 192; *Gard. Chron.*, 1867, p. 180, with fig.; *Flore des Serres*, t. 2329.

V. BOXALLI.—See *V. LAMELLATA* BOXALLI.

V. BRUNNEA, *Rchb. f.*—A distinct small-flowered species, having long ligulate toothed leaves; flowers olive-brown inside, about the same size as those of *V. concolor*; sepals and petals cuneate, elongate obtuse; lip pale yellowish-white, spur long conical acute. A flower of this species was communicated to us by J. R. Roberts, Esq., of Woodford, where it flowered under the care of Mr. Willingale, the gardener, in July, 1893.—*Native country not stated*.

V. CATHCARTII.—See *ESMERALDA* CATHCARTII.

V. CLARKEI.—See *ESMERALDA* CLARKEI.

V. COERULEA, *Griffith*.—This remarkably handsome plant produces an erect stem 2 to 3 feet high, with the usual distichous loriform channelled coriaceous leaves, which are unequally truncate with a concave notch and



VANDA COERULESCENS

acute lateral lobes; the erect scapes are much longer than the leaves, and bear dense racemes of ten to fifteen flowers or more, the flowers 5 inches across, with the membranaceous sepals and petals flat oblong blunt and shortly stalked, of a beautiful pallid blue, and the small lip linear-oblong, leathery, deep blue, the point blunt with two diverging lobes; the spur is short and blunt, and the disk bears three lamellae. It does not require so much heat as the other kinds, The flowers are produced during the autumn months, and last six weeks in perfection. This plant is well grown by Mr. Hill, gardener to Lord Rothschild, Tring Park, where are found some fine varieties of this species.—*Khasia Mountains*.

FIG.—*Warner, Sel. Orch. Pl.*, i. t. 18; *Pescatorea*, t. 29; *Flore des Serres*, t. 609; *Paxton, Fl. Gard.*, i. t. 36; *Moore, Ill. Orch. Pl. (Vanda)*, t. 2; *Jennings, Orch.*, t. 34; *L'Il. Hort.*, t. 246; *Lemaire, Jard. Fl.*, t. 102; *Puydt, Les Orch.*, t. 45; *L'Hort. Franç.*, 1862, t. 1; *Xenia Orch.*, i. t. 5; *Lindenia*, iv. t. 160; *Reichenbachia*, ii. t. 57; *L'Orchidophile*, 1890, p. 369; *Gartenflora*, 1890, t. 1332; *Revue Hort. Belge*, 1891, p. 165, t. 21; *Veitch's Man. Orch. Pl.*, vii. p. 91; *Orchid Album*, vi. t. 282.

V. COERULESCENS, *Griffith*.—This elegant little species has elongated stems, with the leaves distichous leathery, strap-shaped, truncately bilobed, 5 to 7 inches long, dark green; the scapes are slender, axillary, erect, bearing from ten to twenty flowers; the cuneate ovate sepals and petals are pale mauve-blue, twisted at the clawed base; the lip smaller obcuneate dilated emarginate, of a rich violet with purplish lilac auricles, and the conical spur tipped with green. It blooms during March and April, lasting a long time in perfection.—*Burmah*.

FIG.—*Bot. Mag.*, t. 5834; *Floral Mag.*, 2nd ser., t. 256; *Griffith, Icon. Pl. As.*, t. 331; *Gard. Chron.*, 1870, p. 529, f. 97; *L'Orchidophile*, 1883, p. 636; *Id.*, 1892, p. 48; *Orchid Album*, i. t. 48.

V. COERULESCENS BOXALLII, *Rehb. f.*—A curious and charming form, in which the leaves are rigidly distichous, strongly keeled, obliquely erose at the apex, and the flowers form a rather close raceme on a comparatively short scape; the flowers are white and blue and very effective, the obtuse or retuse sepals and petals being white with a tinge of lilac, and the lip with its dilated front lobe deep violet bordered with white; the disk bears some smooth longitudinal ridges, with dark blue stripes alternating with white ones.—*Transgangetic India*.

FIG.—*Bot. Mag.*, t. 6328.

V. CONCOLOR, *Blume*.—A distinct-looking plant, referred by Sir W. J. Hooker to *V. Roxburghii*. It has tall erect stems 5 to 6 feet high, with lax membranaceous evergreen leaves, which are obliquely tridentate at the ends; the flowers are numerous, rather distant, in lateral elongated racemes, the oblong obovate undulated sepals and petals white on the outer surface, and of a uniform cinnamon-brown within, the lip three-lobed, downy at the base, white with rosy dots on the side-lobes, the front or middle lobe cinnamon-brown, cuneate and bilobed at the tip; it has a conical attenuated spur, and is deliciously scented.—*China*.

FIG.—*Bot. Mag.*, t. 3416; *L'Orchidophile*, 1887, p. 144.

SYN.—*V. furva* (*Bot. Reg.*, non Bl.); *V. Roxburghii unicolor*; *V. stella*.

V. CRISTATA, *Lindl.*—A distinct and curiously marked Orchid. The stems are erect free-growing, with distichous carinate leathery ligulate leaves, truncate and three-toothed at the apex. The peduncles are short axillary erect, three- to six-flowered, the oblong obtuse arching sepals and narrower petals of a yellow-green, and the lip oblong, convex saccate towards the front, and divided at the apex into three narrow diverging lobes, green beneath, the upper surface



VANDA CRISTATA.

deep velvety tawny-yellow marked with blood-purple longitudinal stripes, the basal auricles ovate, of a deep blood-purple on the inner face. It produces its flowers from March to July, and lasts in bloom for six weeks or two months.—*Nepaul; Bhotan; Sikkim.*

FIG.—*Bot. Mag.*, t. 4304; *Bot. Reg.* 1842, t. 48; *Moore, Ill. Orch. Pl. (Vanda)*, t. 3; *Journ. of Hort.*, 1886, xii. p. 467, f. 5; *Orchid Album*, vii. t. 290.

V. DENISONIANA, *Benson et Rehb. f.*

—A very chaste and desirable species, the first white *Vanda* which has been discovered. In its habit of growth it much resembles *V. Bensoni*, but the foliage is broader and somewhat longer. Its stems are erect, with lorate rigid recurved dark green leaves deeply two-lobed at the apex, both the lobes being sharp-pointed. The racemes are axillary.

five- to six-flowered, on stout ascending peduncles, while the flowers themselves are medium-sized, thick and fleshy, the oblong spathulate dorsal sepal and the broadly ovate lateral ones, as well as the spathulate petals, being white slightly tinged with green, the lip being also white, pandurate, the apex two-lobed with the lobes divaricate like the tip of a blackcock's tail, the base with two sub-quadrate auricles, and the spur short and conical.—*Irracan Mountains.*

FIG.—*Bot. Mag.*, t. 5811; *L' Ill. Hort.*, 3rd ser., i. t. 105; *Florist and Pomol.*, 1889, p. 249, with fig.; *Gard. Chron.*, n.s., xxiv. p. 105, f. 21; *Lindleya*, i. t. 21; *Veitch's Max. Orch. Pl.*, vii. p. 93.

V. DENISONIANA HEBRAICA, *Rehb. f.*—In this variety, which was introduced by us, the sepals and petals are sulphur-coloured on both sides, but darker within, where they are covered with numerous spots, and transverse short bars, somewhat resembling Hebrew characters; spur orange inside; anterior part of the blade of the lip olive-green. Flowers in July.—*Burma.*

FIG.—*Orchid Album*, vi. t. 248.

V. DENSIFLORA.—See *SACCOLABIUM GIGANTEUM*.

V. FURVA.—See *V. CONCOLOR*.

V. GIGANTEA, *Lindl.*—A noble and stately plant, with bold distichous dark green broadly lorate recurved tough fleshy leaves, $1\frac{1}{2}$ foot long, very blunt at

the apex, emarginate, with the lobes nearly equal. The racemes are axillary, about half the length of the leaves, bearing showy flowers 3 inches across, with oblong obovate blunt-ended sepals and petals of a rich golden-yellow freely and irregularly marked with rich cinnamon-brown blotches; and a white fleshy lip, which is small incurved channelled dolabriform, with short rounded basal auricles. It blooms in the spring months, and continues a long time in full perfection if the flowers are kept dry. The flowers of this plant have not given general satisfaction to Orchid growers, but a large plant which we had in our



VANDA DENISONIANA.

collection some years ago produced two long spikes, each bearing a dozen blossoms of large size and good substance, and we have known it produce seventeen blossoms on one spike. This is the most massive and majestic plant of the whole group.—*Burmah*.

FIG.—*Bot. Mag.*, t. 5189; *Batem. Second Cent. Orch. Pl.*, t. 142; *L' Ill. Hort.*, t. 277; *Xenia Orch.*, ii. t. 112.

SYN.—*V. Lindleyana*; *Fieldia gigantea*.

V. HASTIFERA, *Rehb. f.*—A very rare plant of tall-growing habit, bearing lax racemes of flowers surpassing those of *V. lamellata* *Bozallii*. The spatulate undulated sepals and petals are light yellow marked with fine red blotches inside; the lip, which is peculiar, having a compressed conical spur, semi-

oblong triangular auricles, and a hastate blade covered with hairs at its base which is dilated thick tumid blunt and shining in front, white marked with brown and mauve, and the column is white spotted with brown.—*Sondaic Islands*.

V. HOOKERIANA, *Rehb. f.*—This distinct and very beautiful species, which is in habit something like a small form of *V. teres*, has resisted many attempts to introduce it in a living state, but, thanks to the zeal of our collectors, we have now a plentiful supply. It has elongate rigid terete pale green rooting stems, and erect terete pale green leaves 2 to 3 inches long, and tapered to a subulate point; the peduncles grow out near the top of the stem, opposite the leaves, which they exceed in length, and bear a raceme of from two to five membranaceous flowers, each 2½ inches in diameter, the sepals white tinted with rose, the larger spathulate oblong undulated petals white spotted with magenta, and the lip expanded from a cuneate base, three-lobed, upwards of 1½ inch broad, white, beautifully lined longitudinally in the centre, transversely on the side lobes, and spotted near the edge on all the lobes with rich magenta-purple. a large triangular deep purple auricle standing on each side the column. It was recently flowered in the collections of Lord Rothschild, at Tring Park, and W. R. Lea, Esq., Hallow, Worcester. In these cases only two flowers have been produced on the spike, but we have reason to believe that with improved cultivation it will produce as many as five. It flowers in September, and requires the same treatment as that recommended for *V. teres*. A form of this plant, which has been introduced from Cochin China, appears to be a very shy bloomer.—*Borneo; Perak; Cochin China*.

FIG.—*Orchid Album*, ii. t. 73; *L'Ill. Hort.*, 3rd ser., 1883, xxx. t. 484; *Reichenbachia*, ii. t. 74; *Veitch's Man. Orch. Pl.*, vii. p. 96.

V. INSIGNIS, *Blume*.—This very beautiful plant has by repute been an inmate of our gardens for years, but its name was for a long time given in mistake to a variety of *V. tricolor*. The true plant is, however, now in cultivation. Its stems are sub-erect, clothed with distichous rigid linear-ligulate curving channelled leaves, which are unequally cut away or denticulate at the tip; and producing five- to seven-flowered racemes about equalling the leaves in length; the flowers are as large as those of *V. tricolor*; the obovate spathulate obtuse sepals and petals are of a light brown within spotted with deep chocolate-brown, yellowish-white on the outside; and the lip is large, almost fiddle-shaped, with two short white side lobes, the front lobe white, semi-ovate at the base, suddenly expanding into a concave semi-lunar limb of a light purplish-rose, the disk traversed by two low ridges. It is exceedingly handsome, producing its blooms in May and June.—*Moluccas; Timor*.

FIG.—*Bot. Mag.*, t. 5759; *Jennings, Orch.*, t. 46; *Orchid Album*, iv. t. 172; *Blume, Rumph.* t. 192 and t. 197; *Paxton, Fl. Gard.*, ii. p. 19, with fig.; *Lindenia*, viii. t. 355.

V. INSIGNIS, *Warner*.—See *V. TRICOLOR INSIGNIS*.

V. INSIGNIS SCHRÖDERIANA, *Rehb. f.*—A very chaste and distinct variety, which was exhibited by Baron Schröder in 1883. The flowers are similar in form to those of the type, but their colours are quite distinct, being yellow and white; the sepals and petals are of a light yellow, and the lip, which has a large concave anterior limb, pure white. It flowers in autumn.—*Malay Archipelago*.

V. KIMBALLIANA, *Rehb. f.*—Undoubtedly this is one of the handsomest *Vandas*, which was originally found by Mr. Boxall in Upper Burmah. It is of slender habit, producing very narrow subulate leaves, tapering to a point, 7 or 8 inches long; scapes nodding, 12 to 18 inches long, bearing twelve or more handsome flowers measuring 2 inches across; upper sepal and petals narrow-oblong obtuse undulate at the margins, white suffused with delicate rose; lateral sepals much larger, falcate, white suffused with pale rose towards the extremities; lip three-lobed, the side lobes small, bright yellow dotted with brown, the mid-lobe large cordate, deep rich rosy-purple. This plant is named in honour of W. S. Kimball, Esq., Rochester, U.S.A., a most munificent patron of this class of plants.—*Burmah*.

FIG.—*The Garden*, 1890, xxvii. p. 322, t. 747; *Lindenia*, v. t. 204; *Bot. Mag.*, t. 7112; *Gard. Chron.*, 3rd ser., 1889, vi. p. 335, f. 50; *Journ. of Hort.*, 1890, xx. p. 41, f. 6; *Veitch's Man. Orch. Pl.*, vii. p. 99; *Warner, Sel. Orch. Pl.*, iii. t. 36.

V. LAMELLATA BOXALLII, *Rehb. f.*—A very distinct and charming variety, of very free-flowering character, and which on account of its dwarf habit takes up but little room. It has slender erect stems, long narrow ligulate channelled much recurved leaves, obliquely and acutely bidentate at the tip, and handsome floral racemes, which are longer than in the type, bearing fourteen to twenty flowers, which are handsomely coloured with white, rich brown, and magenta; the dorsal sepals and two petals are directed backwards, the dorsal sepal oblanceolate, creamy-white, the lateral ones obovate, with the inner side cut away in a curve half way, this part reddish-brown tinged with purple; the petals are oblong cuneate, white; and the lip has a squarish subpanduriform limb of a rich rosy-magenta towards the front, the disk with six reddish-purple stripes running back to the mouth of the tube; the creamy-white outer half of the lateral sepals, contrasting with the reddish-brown inner half, is peculiar. It flowers in November and December, affords some variety, and is vastly superior to the type.—*Philippine Islands*.



VANDA LAMELLATA BOXALLII.

FIG.—*The Garden*, 1881, xix. p. 574, t. 287; *Gard. Chron.*, n.s., 1881, xv. p. 87, f. 18; *Orchid Album*, viii. t. 338; *Lindenia*, i. t. 32; *Veitch's Man. Orch. Pl.*, viii. p. 100.

V. LIMBATA, *Blume*.—This rare and beautiful species is distinct in growth, producing on longish peduncles the axillary racemes of from twelve to thirteen flowers; the stems are robust with long thick roots; the leaves are leathery, channelled, 8 to 10 inches long, and nearly 1 inch broad, with an obliquely retuse apex; the flowers, which grow in erect loose racemes, are 2 inches in diameter, the spatulate sepals and petals cinnamon-brown, blotched and tessellated with a darker shade of reddish-brown, and evenly bordered with yellow, the exterior tinged with lilac; the lip is quadrate, slightly pandurate,

rosy-lilac margined with white, the disk tumid with five to seven parallel grooves. This species flowers in June, and lasts a long time in perfection.—*Java*.

FIG.—*Bot. Mag.*, t. 6173 ; *Warner, Sel. Orch. Pl.*, iii. t. 9.

V. LINDENI, *Rehb. f.*—This plant is closely allied to *V. hastifera*, and was introduced by Mr. August Linden in 1885. The sepals and petals are cuneate oblong, undulated at the margins, yellow spotted with red; lip three-lobed, fleshy, the lateral lobes at right angles to the middle lobe, which is triangular obtuse ancipitous.—*New Guinea*.

FIG.—*Lindenia*, ii. t. 56.

V. LISSOCHILOIDES.—See *V. BATEMANII*.

V. LOWII.—See *RENANTHERA LOWII*.

V. PARISHII, *Rehb. f.*—A very handsome and distinct *Vanda*, having at first sight the appearance of a *Phalaenopsis*. It is a dwarf stout-growing species, and produces broadly ligulate-obtuse fleshy distichous bright green leaves with an unequal bilobed apex; and a stiff erect scape supporting several large prettily-spotted flowers, of which the cuneate-oblong acute sepals and petals are of a greenish-yellow spotted with somewhat bold dots of reddish-brown; and the lip, which is very powerfully scented with a peculiar odour, has the front lobe pale magenta, narrowly margined with white, rhomboid, gibbous below the apex with a median keel, and a violet-coloured conical callus at the base, where is a short gibbous spur and small white orange-striped auricles. It flowers during the summer months.—*Moulmein*.

FIG.—*Orchid Album*, i. t. 15.

V. PARISHII MARRIOTTIANA, *Rehb. f.*—A very distinct and beautiful variety, first flowered by Sir W. H. S. Marriott, Bart. It is a dwarf compact plant, with the short stems closely set with distichous ligulate-obtuse fleshy leaves, slightly and unqually emarginate; the scape is axillary erect, bearing a raceme of about six handsome flowers, of which the sepals and petals, instead of being spotted as in the type, are bronzy-brown richly suffused with magenta, and the lip has white basal auricles and a rich magenta rhomboid front lobe. The flowers of this variety are not scented. It blossoms during the summer months.—*Moulmein*.

FIG.—*Orchid Album*, ii. t. 61 ; *Vitch's Man. Orch. Pl.*, vii. p. 101.

V. PARVIFLORA.—See *AERIDES WIGHTIANUM*.

V. ROXBURGHII, *R. Br.*—A well-marked old species, having stout dwarfish erect stems, with two-ranked ligulate channelled recurved leathery leaves, obliquely tridentate at the apex; the peduncles are erect, and bear a raceme of six to twelve flowers, which have the bluntly oblong-obovate sepals and petals pale green with chequered lines of olive brown, the outer surface white and the lip violet-purple, convex in the front parts, deeper purple towards the point, the lanceolate lateral lobes white, and the base projected backwards to

form a short pinkish spur. The flowers, which are very sweet-scented, appear during the summer, and last five or six weeks in beauty. There are several varieties of this plant, one having a darker coloured blue lip than the other, and one having the lip pink.—*India: Bengal.*

FIG.—*Bot. Mag.*, t. 2245; *Id.*, t. 3416 (var. *unicolor*); *Bot. Reg.*, t. 506; *Flore des Serres*, ii. t. 2; *Id.*, t. 641, f. 2; *Paxton, Mag. Bot.*, vii. p. 265, with tab. (pink lip); *Wight, Icon. Pl. Ind. Or.*, t. 916; *Rehb. Fl. Exot.*, t. 121; *Paxton, Fl. Gard.*, ii. t. 42, f. 2; *Hook. First Cent. Orch. Pl.*, t. 87 (var. *unicolor*); *Orchid Album*, ii. t. 59.

SYN.—*V. tessellata*; *V. tesselloides*; *Cymbidium tesselloides*.

V. ROXBURGHII UNICOLOR.—See **V. CONCOLOR.**

V. SANDERIANA.—See **ESMERALDA SANDERIANA.**

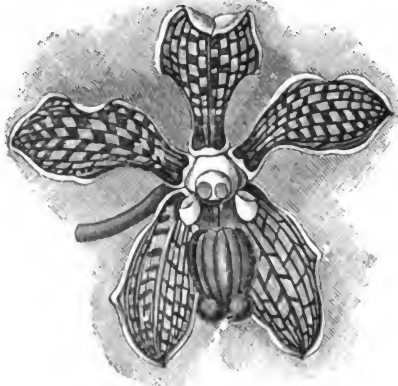
V. STANGEANA, *Rehb. f.*—A species somewhat resembling *V. Roxburghii*, producing from four to five flowers on a spike. The sepals and petals inside are at first greenish, afterwards ochre-coloured, tessellated with dark purple-brown; the auricles of the lip are blunt, white with yellow and some mauve-blue spots, the centre lobe cordate triangular, emarginate at the apex, white with mauve-blue, or wholly mauve-blue.—*Assam.*

FIG.—*Xenia Orch.*, ii. t. 102.

V. STELLA.—See **V. CONCOLOR.**

V. SUAVIS, *Lindl.*—A truly magnificent species, and one of the finest of Orchids for exhibition purposes. It is a strong-growing plant, of erect habit, with lorate flaccid recurved dark green leaves, obliquely dentate at the apex. The peduncles are axillary, and bear a bold elongate raceme of large handsome flowers, which are very freely produced, and deliciously fragrant. The sepals and petals are bluntly spatulate, the dorsal sepal and two petals turned backwards away from the lip, convex, much undulated, and sub-lobate, the petals twisted so as to bring their hinder face foremost, all pure white unspotted outside, but on the inner surface freely spotted and barred, with rich blood-purple; the convex three-lobed lip has the front lobe narrow, deeply bifid, and of a pale rosy purple, while the lateral lobes are ovate, flat, and of a deeper bright rosy-purple. It blossoms at different periods of the year, and lasts a long time in perfection. So noble and sweet a plant should find a home in every Orchid collection.—*Java.* [For Illustration see page 748.]

FIG.—*Bot. Mag.*, t. 5174; *Batcm. Second Cent. Orch. Pl.*, t. 125; *Pescatorea*, t. 8 (*media*); *Jennings, Orch.*, t. 23; *Paxton, Fl. Gard.*, ii. t. 42, f. 3; *Puydt, Les Orch.*, t. 47; *Xenia Orch.*, i. t. 12; *L'Hort. Franç.*, 1861, t. 1; *Flore des Serres*, t. 641, f. 3; *Id.*, tt. 1604-5 (*Urubiana*); *Gard. Chron.*, N.S., xxii. 237, f. 47 (Wingate's var.); *L'Orchidophile*, 1886, p. 301; *Revue Hort. Belge*, 1890, p. 157, t. 19; *Gard. Chron.*, 3rd ser., 1890, vii. p. 133, f. 20; *Veitch's Man. Orch. Pl.*, vii. p. 107; *Orchid Album*, iv. t. 180.



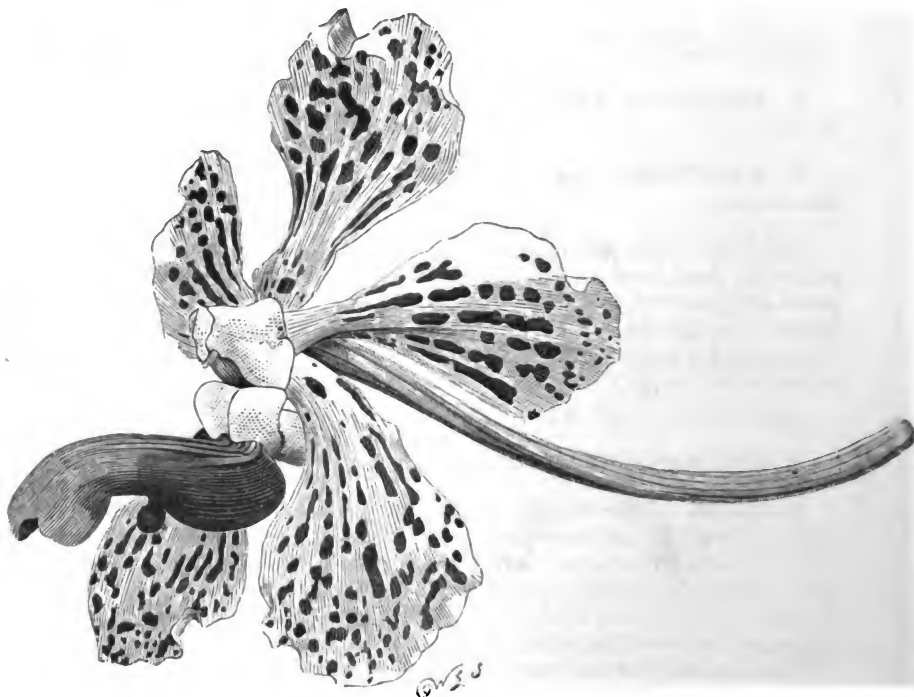
VANDA ROXBURGHII.

V. SUAVIS, "CHATSWORTH VAR.," *Williams*.—A very fine bold form of this old favourite. It differs in having a much larger number of spots and streaks on the sepals and petals; the lip is rosy-purple, freckled with dots of deep purple; side lobes rich violet purple margined with white. It originated in the collection of His Grace the Duke of Devonshire at Chatsworth.—*Java*.

FIG.—*Orchid Album*, vii. t. 324.

V. SUAVIS FLAVA, *Lindl.*—In this form the ground colour of the sepals and petals is yellow instead of China-white, richly marked with broad oblong brown spots, and the lip is scarcely so deep in colour as the typical plant. Flowers at various seasons.—*Java*.

FIG.—*Bot. Mag.*, t. 4432 (*tricolor*); *L'Orchidophile*, 1886, p. 301.



VANDA SUAVIS.

(From the *Gardeners' Chronicle*.)

V. SUAVIS GOTTSCHALCKEI, *Williams*.—This is the finest variety of *V. suavis* that has ever come under our notice. It was first flowered in 1869 by G. Gottschalcke, Esq., of Manchester, and exhibited by him at the Manchester Show in that year. The stem and foliage are both much stouter than those of the type; the flowers, too, are much larger, and of stouter substance and better shape. The sepals and petals are more densely spotted than in *V. suavis*, and the pedicels are deeply tinged with rose; the lip is bright rosy-purple tipped with white. The flowers are deliciously scented, and are borne at different times of the year.—*Java*.

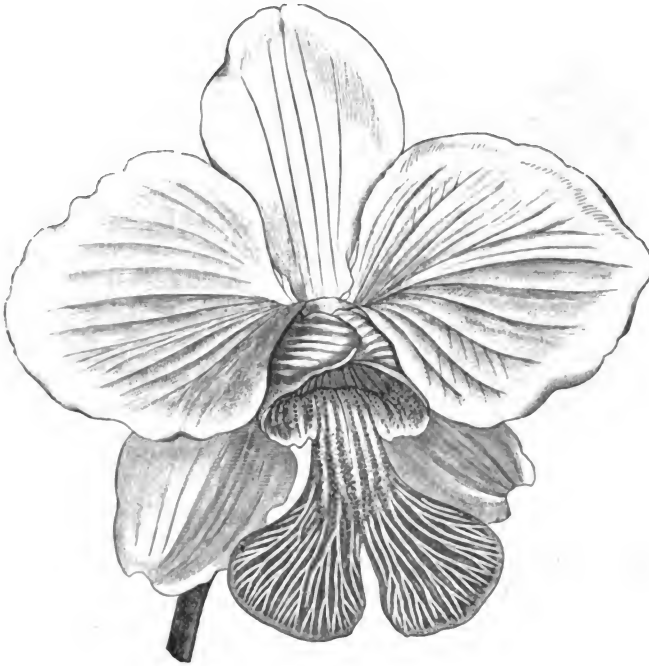


VANDA SUAVIS.
(From the *Gardeners' Chronicle*.)

V. SUAVIS RUBRA, *Rodigas*.—A distinct variety; the sepals and petals being suffused with orange instead of having the dark-brown marblings usually seen in the type, whilst the lip is red.—*Java*.

FIG.—*L' Ill. Hort.*, xxxii. t. 579.

V. TERES, *Lindl.*—A very handsome and distinct species, of curious aspect, being of a scrambling or climbing habit of growth, extending several feet in length, the stems as well as the leaves being terete or cylindrical, and dark green. Its large flowers are produced in ascending mostly two-flowered



VANDA TERES.

racemes from May to July, and last four or five weeks in beauty; the sepals are oblong obtuse, the dorsal one erect, white slightly tinged with rose, the lateral ones twisted, parallel with the lip, creamy white; the petals are larger, sub-orbicular and undulated, rosy-magenta, lighter towards the margins; the lip is large, cucullate, bright rosy-magenta, strongly veined, the throat orange, striped and spotted with crimson, with a conical spur at the base, and a rounded, dilated and emarginate apex. The racemes of flowers issue directly from the stems at a point opposite the leaves. It is rather a shy-flowering species with most people, but we think this may be traced to the plant being too much dried up during the growing season. We have found that the best way to cultivate and flower it successfully is to place the pots which contain the plants under a covering of damp sphagnum moss in a warm sunny house, as near the glass as possible. An abundance of water and air should be given to it while it is

making its growth; when at rest less will suffice. This plant is exceedingly well flowered by Mr. Bergman, gardener to Baron Alphonse de Rothschild, Ferrières, France, who grows a quantity of it in a stove with other plants, close to the glass, the pots being plunged in sphagnum moss. These plants are regularly cut down every year and are never allowed to attain a height exceeding 2 to 3 feet; treated in this way the plants flower abundantly, producing hundreds of blossoms.—*Burmah*; *Martaban*; *Sylhet*; *Khasia*.

FIG.—*Bot. Mag.*, t. 4114; *Bot. Reg.*, t. 1809; *Parton, Mag. Bot.*, v. p. 193, with tab.; *Rev. Hort.*, 1856, t. 22; *Hook. First Cent. Orch. Pl.*, t. 88; *Reichenbachia*, i. t. 27; *Veitch's Man. Orch. Pl.*, vii. p. 104; *The Garden*, 1892, xlii. p. 276, t. 876.

V. TERES ALBA—See *V. TERES CANDIDA*.

V. TERES ANDERSONI, *Williams*.—A very fine variety of this handsome and distinct species. It has the same habit of growth as the type, but is far more free in blooming, producing its flowers when quite young. The racemes are 10 inches in length, and bear from five to six flowers, which are richer and deeper in colour than in the old form. This plant was magnificently grown by J. Broome, Esq., late of Wood Lawn, Didsbury, whose specimen, which was trained cylindrically when exhibited, produced on one occasion over two hundred and fifty flowers, and was a grand object.—*Sylhet*.

FIG.—*Warner, Sel. Orch. Pl.*, iii. t. 2; *Orchid Album*, x. t. 475.

V. TERES AURORA, *Rehb. f.*—A very pretty variety; sepals white, petals white with a slight rosy tint, throat light ochre-colour with rosy lobes, which are furnished with two rows of small purple dots; column light rose-purple.—*Sylhet*.

FIG.—*Journ. of Hort.*, 1887, xiv. p. 135, f. 22.

V. TERES CANDIDA, *Rehb. f.*—A distinct and chaste form which was first flowered by Mr. Whittaker, gardener to Lord Crewe. It differs from the type in bearing white flowers, which are produced during the summer months. It is well flowered by Mr. Whillans, gardener to His Grace the Duke of Marlborough, Blenheim.—*Sylhet*.

FIG.—*Orchid Album*, ix. t. 409.

SYN.—*V. teres alba*.

V. TESSELLATA—See *V. ROXBURGHII*.

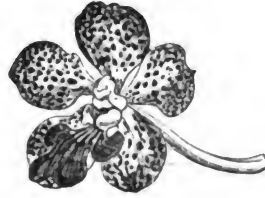
V. TESSELLOIDES—See *V. ROXBURGHII*.

V. TESTACEA—See *AERIDES WIGHTIANUM*.

V. TRICOLOR, *Lindl.*—A charming free-growing species with tall erect stems clothed with distichous lorate channelled recurved leaves, obliquely bilobed and somewhat erose at the tip. The peduncles are axillary from the upper leaves, and support short dense racemes of handsome and fragrant flowers, which are white outside. The oblong obovate obtuse sepals and petals are coriaceous, pale yellow, spotted with brownish-red, the lip three-lobed, the convex cuneate deeply emarginate middle lobe bright rosy-magenta, paler at the tip, the disk marked with five white lines; the basal lobes are erect rounded,

white; there is a short compressed white spur, and a short thick white column. It blooms at different times in the year, and lasts long in perfection. There are several varieties of this plant, some much superior to others. It makes a superb specimen for exhibition purposes, as do all the varieties.—*Java*.

FIG.—*Bot. Mag.*, t. 4432; *Pescatorca*, t. 42; *Id.*, t. 42 B (*pallens*); *Paxton, Fl. Gard.*, ii. t. 42; *Flore des Serres*, t. 641; *Lemaire, Jard. Fl.*, t. 136; *Puydt, Les Orch.*, t. 48; *Lindenia*, iv. t. 167; *Orchid Album*, ii. t. 77.



VANDA TRICOLOR
(much reduced).

V. TRICOLOR, *Dulkeith variety*, *Hort.*—This is a very high coloured form and is one of the best varieties of this noble species although not so large in the flower as *V. tricolor planilabris*. The sepals and petals are pale yellow, with rich cinnamon-brown markings, and the lip is of a rich magenta.—*Java*.

V. TRICOLOR, *Downside variety*, *Hort.*—Flowered by W. Lee, Esq., Downside, Leatherhead, and considered by him to be the best of all the forms of *V. tricolor*. The flowers are large and very rich in their colour and markings.—*Java*.

V. TRICOLOR CORNINGII, *Williams.*—A handsome and free-flowering variety, having very broad dark green foliage of stout texture. The flowers are large and of good substance; the sepals and petals rich yellow, spotted and streaked with deep crimson, and beautifully margined on the inner and outer surfaces with rosy-purple; the lip dark plum colour, softened off towards the base into a pale rose. This variety lasts a long time in perfection. It was flowered in the fine collection of E. Corning, Esq., of Albany, New York, under the care of Mr. Gray.—*Java*.

V. TRICOLOR DODGSONI, *Williams.*—A superb variety, named in honour of the late R. B. Dodgson, Esq., at one time one of the most enthusiastic cultivators of these plants, with whom it originated. The flowers are large, and borne in great numbers on the racemes; the sepals and petals being light amber colour, streaked and blotched with reddish-brown and margined with violet; the lip large, rich purplish-violet, with a few white blotches near the base. It is very highly scented. There is a fine plant of this variety in the collection of Baron Sir J. H. W. Schröder, Staines, where it flowers every year.—*Indian Islands*.

V. TRICOLOR FORMOSA, *Hort.*—In this fine variety the sepals and petals are bright yellow covered with oblong red-brown spots arranged in rows, which sometimes become confluent.

V. TRICOLOR INSIGNIS, *Hort.*—This plant, which has been grown as *V. insignis*, must now take its place as a variety of *V. tricolor*, since the true *V. insignis* has been introduced; it will not, however, be any the less welcome to Orchid growers though it be but a variety of *V. tricolor*, for it makes a very handsome specimen. The sepals and petals are light yellow spotted with

crimson, and the lip is pale rosy-lilac. It blooms at different times of the year, but generally in spring and autumn, and continues in bloom for six weeks.—*Java*.

FIG.—*Warner's Sel. Orch. Pl.*, i. t. 3 (*V. insignis*).

SYN.—*V. insignis* (Warner).

V. TRICOLOR PATERSONI.—A very beautiful form, flowering when quite small. The flowers are about 2 inches in diameter; the sepals and petals broad, creamy-white densely spotted with cinnamon-brown; and the lip bright magenta. This variety originated with Dr. Paterson, Bridge of Allan, who grows these plants to great perfection.—*Java*.

FIG.—*Gard. Chron.*, N.S., 1884, xxii. p. 236, f. 46; *Id.*, 3rd ser., 1890, vii. p. 135, f. 21.



VANDA TRICOLOR PATERSONI.

(From the *Gardeners' Chronicle*.)

V. TRICOLOR PLANILABRIS, *Lindl.*—One of the finest forms of *V. tricolor*, having the same general habit and character as the type, but producing larger, brighter-coloured flowers of great substance. The sepals and petals are very broad, roundish obovate clawed or narrowed to the base, citron-yellow, thickly marked with rich brown spots, those on the claw rather elongate. The large flat lip is rose-coloured, margined with purplish-mauve and striped with chocolate-purple on the disk. It flowers at different times of the year.—*Java*.

FIG.—*Orchid Album*, ii. t. 87; *Lindenia*, viii. t. 369.

V. TRICOLOR RUSSELLIANA, *Hort.*—This beautiful variety is very distinct both in habit of plant and flower. It has a peculiar and gracefully pendulous style of growth, and is, at the same time, very robust. The racemes are long, and the flowers very bright in colour. It bloomed with Mr. Sorley, when gardener to the late J. Russell, Esq., of Falkirk, and is an extremely fine variety.—*Java*.

V. TRICOLOR WALLICHII, *Hort.*—A very beautiful and distinct variety with the spots on the petals of reddish-brown, bordered with rose; lip rosy-lilac with deep magenta-rose lines at the base. It was recently flowered by M. A. de la Devansaye, Chateau du Fresne, France, who has one of the finest collections of *Vandas* on the Continent.—*Java*.

FIG.—*Revue Hort.*, 1893, p. 328 (plate).

V. TRICOLOR WARNERI, *Williams.*—A very handsome and most distinct variety, first flowered by R. Warner, Esq., of Broomfield, Chelmsford. It is distinct in its growth, and has peculiarly ribbed linear lorate leaves, while the sepals and petals are distinctly margined with deep rose, and the lip is deep rosy-purple.—*Java*.

FIG.—*Warner, Sel. Orch. Pl.*, ii. t. 39.

V. VIOLACEA.—See *SACCOLABIUM VIOLACEUM*.

V. VITELLINA, *Kränzlin.*—Dr. Kränzlin remarks about this new species that it resembles in every respect *V. coerulescens* and especially its variety *Bozalli*, but the flowers are very small and as yellow as the yolk of an egg. He further describes it as being a gay-looking thing. It was first flowered in 1892, in the Royal Botanic Gardens, Berlin.—*Native country not stated*.

VANILLA, Swartz.

(Tribe Neottieae, subtribe Vanillae.)

This genus contains but a few species, all of which are climbing plants, with dark green terete rooting stems, oblong acuminate fleshy leaves, rarely wanting, and short axillary spikes or racemes of largish flowers, which in most of the known species are dull-coloured and uninteresting. The sepals and petals are free and spreading, the lip adnate with its limb, broad and concave, and its base rolled around the elongate wingless column. The species, which number about twenty, occur in the tropics of both hemispheres. *Vanilla* is, perhaps, the only genus of Orchidaceous plants which is of economic value. The fruits of various species of this genus produce the *vanilla* of commerce so extensively used for flavouring chocolate, liqueurs, ices, &c., and which is considered one of the finest of aromatic perfumes.

Culture.—These plants require strong heat during their growing season, and should be potted in peat and sphagnum moss, and have either some rough logs of wood to grow upon, or should be trained against a wall. They produce roots freely from their climbing stems, and are consequently readily increased by means of cuttings.

V. LUTESCENS, *Moz.*—An old and handsome species, producing flowers 6 inches in diameter, which are borne on two-flowered racemes from the axils of the leaves; the sepals and petals are greenish-yellow, lip bright yellow.—*La Guayra, Venezuela.*

FIG.—*Revue Hort.*, 1856, p. 24; *Flore des Serres*, t. 2218.

V. PHALAENOPSIS, *Rehb. f.*—An exceedingly interesting plant, and one which is quite an exception to the other species, as it produces very showy flowers. It is of climbing habit, producing long rooting leafless stems as thick as one's little finger, terete fleshy and channelled on one side; the flowers are large, 3 inches across, and borne in umbels at the ends of the flowering branches, six or seven flowers being produced in an umbel, with a few ovate deep green bracts below; the sepals are ovate oblong acute, of a faint blush white, keeled behind, the two lateral ones divided quite down to the base on the lower side; the petals are more ovate and less sharply pointed, somewhat repand, of the same pale blush-white, and channelled down the centre; and the lip is folded in a broadly funnel-shaped form with an oblique recurved repand obtuse limb, the outer side pale rosy blush, the inside tawny orange, rather over 1 inch long, and $\frac{3}{4}$ inch wide. It is exceedingly rare, but well deserving of the attention of Orchid growers.—*Madagascar.*

FIG.—*Flore des Serres*, tt. 1769-70; *Puydt, Les Orch.*, t. 49.

V. PLANIFOLIA, *Andr.*—We have inserted this species, not on account of the beauty of its flowers, which are inconspicuous and of a greenish shade of colour, but because it is largely cultivated for its fruits, which, when dried in the sun, emit a most delicious perfume, and it is from this species, which is so largely cultivated in tropical countries, that the vanilla of commerce is obtained. It is of climbing habit, and may be beneficially used to cover the wall of a stove or warm Orchid house. If it is desired to fruit this plant, the flowers will have to be artificially fertilized. We have seen this plant produce quantities of seed-pods annually in the collection of M. le Duc de Massa, Franconville, France, under the care of the gardener, Mr. Tallué, and also at Osberton Hall, Worksop, the seat of G. S. Foljambe, Esq., under the care of Mr. Woods.—*West Indies.*

FIG.—*Andr. Bot. Rep.*, t. 538; *Bot. Mag.*, t. 272; *Lodd. Bot. Cab.*, t. 733; *Blume, Rumphia*, t. 68.

V. WALKERIAE, *Wight.*—A curious leafless species, which produces very handsome flowers, pure white inside; the sepals tinged outside with fawn colour, and a median streak of deep green; petals also with a green median streak but much narrower than that of the sepals, waved in outline and delicately transparent, as is also the lip, which is obscurely three-lobed and slightly bearded towards the base. It was named in honour of Mrs. Colonel Walker.—*India.*

FIG.—*Wight, Icon. Pl. Ind. Or.*, iil. t. 932.

WARREA, Lindley.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

This is a small group of terrestrial Orchids, separated by Dr. Lindley from the old genus *Maxillaria*. They are pseudobulbous, with few

distichous plicate-venose reed-like leaves, and tall radical scapes bearing a loose raceme of subglobose nearly regular expanded flowers, which have a short rounded chin, and a sessile concave lip, with a crest of elevated fleshy lines on the disk. The few species are found in Peru and United States of Colombia.

Culture.—The same as that noted for *Phajus*, which see.

W. CANDIDA.—See *WARSCIEWICZELLA CANDIDA*.

W. CYANEA, *Lindl.*—A very pretty distinct and rare species, producing from the roots a close upright tuft of evergreen foliage, and slender radical scapes bearing a short erect raceme of pleasing but rather small flowers; the leaves are broadly lanceolate and strongly ribbed, and enfold each other distichously at the base, and the flowers have ovate acute white sepals and petals, and a roundish cuneate lip undulated at the tip, and bearing five elevated lines. It blooms in June, lasting a long time in beauty. It requires to be grown in a pot, with peat and good drainage, in the East Indian house.—*U. S. of Colombia*.

FIG.—*Bot. Reg.*, 1845, t. 28.

W. CYANEA ALBA, *Rchb. f.*—A very pretty variety of this old and much-admired species, the lip of which is pure white instead of being blue as in the type.—*U. S. of Colombia*.

W. MARGINATA.—See *WARSCIEWICZELLA VELATA*.

W. TRICOLOR, *Lindl.*—A very distinct and handsome species. It has oblong terete attenuated jointed pseudobulbs, and long-stalked lanceolate plicate leaves, growing up with the lateral flower-scape, which is purple jointed and about 2 feet in height, and bears at the top a raceme of eight or ten rather large globose drooping flowers; the roundish ovate concave sepals and petals are yellowish white, the two lateral sepals being continued backwards so as to form a blunt spur; and the lip is obovate, cucullate at the base, white at the edge beautifully marked inside with yellow and deep purple; there are three elevated fleshy ridges on the disk. The blossoms are produced in June and July, and last a long time in perfection. It requires the same treatment as *W. cyanea*.—*Brazil*.

FIG.—*Bot. Mag.*, t. 4235; *Lodd. Bot. Cub.*, t. 1884; *Xenia Orch.*, i. t. 24.

SYN.—*Maxillaria Warrana*.

W. TRICOLOR STAPELIOIDES, *Rchb. f.*—This variety flowered in the collection of Messrs. Vervae & Co., of Mont St. Amand, Ghent, Belgium. The sepals are yellowish-white, petals same colour, having five purple stripes in the interior, and in some instances a few spots; lip deep brownish-purple at the base, softening to reddish-yellow at the margin. The above description is taken from the plate in *L'Orchidophile*, as we have not seen this plant.—*Brazil*.

FIG.—*L'Orchidophile*, 1888, p. 176 (plate).

W. WAILESIANA.—See *WARSCIEWICZELLA WAILESIANA*.

WARSCWICZELLA, *Reichenbach fil.*

(Tribe Vandeeae, subtribe Cyrtopodieae.)

A small group of epiphytal bulbous species, sometimes included in *Zygopetalum*. It has the sepals and petals lanceolate, obliquely inserted, often undulated, and the lip, which is continuous with the short foot of the column, is clawed and dilated, bearing on its disk a depressed callus. The plants are without pseudobulbs, and the scapes are one-flowered. There are about half a dozen species, all from Central America.

Culture.—The treatment recommended for *Zygopetalum* will also suit these plants. They are often killed by having too much heat, and they must have plenty of water all the year round, for they seem never to require any rest. They will do on blocks, but in that case live sphagnum should be put about their roots; or they may be grown in pots with peat and moss, and good drainage.

W. AROMATICA, *Rehb. f.*—A rare and little known plant, of moderately vigorous growth, the cuneate oblong acute leaves springing from the root crown, along with the erect scape, which bears a solitary flower 3 or 4 inches in diameter, of which the lanceolate acute sepals and petals are white, and the large obreniform multi-lobulate slightly crispy lip is azure darkening to purple at the base, and having a white border; the disk is smooth, and at the contracted base is a large semi-lunate many-furrowed callus. It emits a very strong but agreeable perfume, and succeeds in a pot with peat and sphagnum moss.—*Central America: Chiriqui.*

FIG.—*Xenia, Orch.*, i. t. 73; *Gard. Chron.*, 1868, p. 75. with fig.

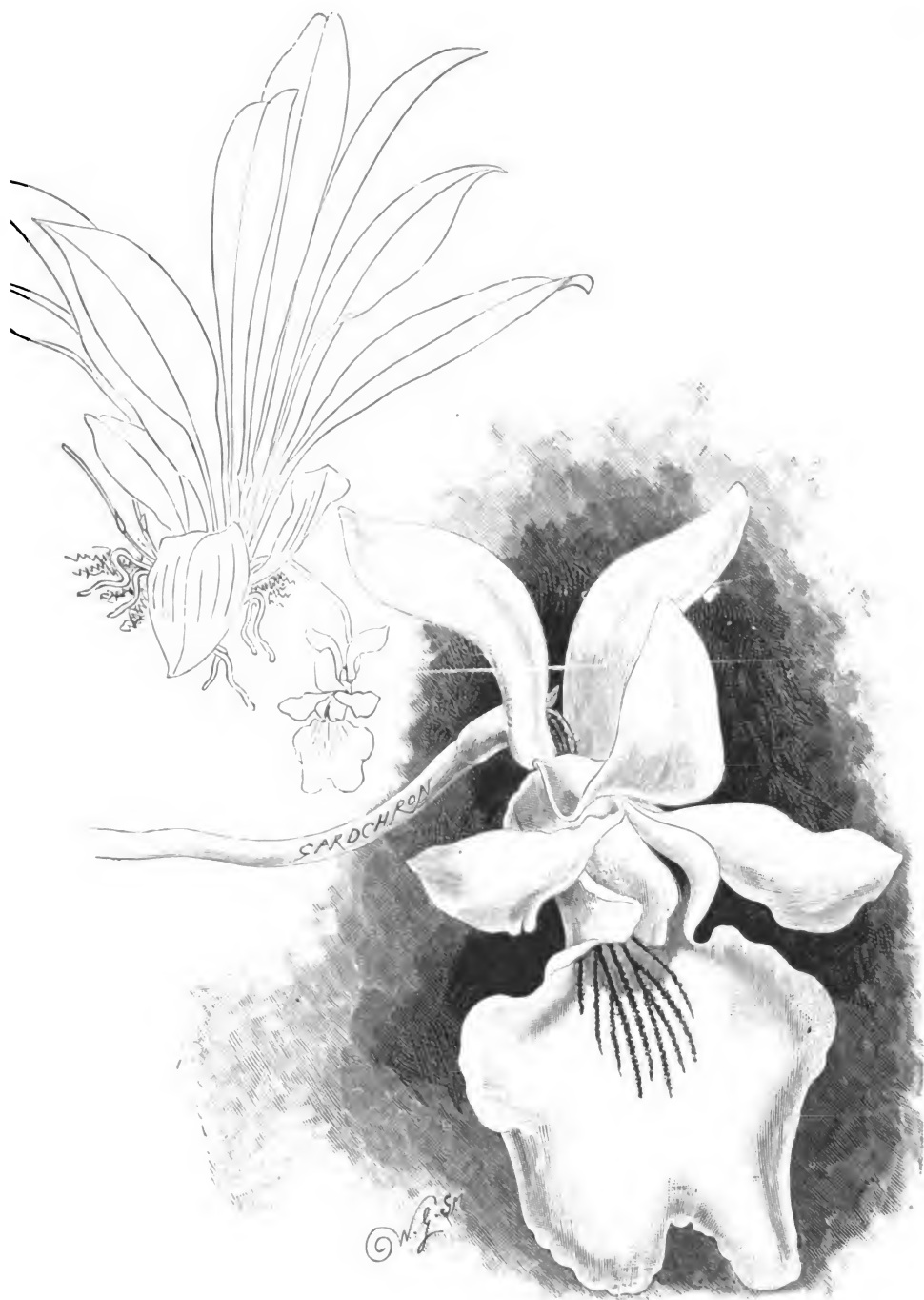
SYN.—*Zygopetalum aromaticum*; *Huntleya aromatica*.

W. CANDIDA, *Rehb. f.*—An extremely rare and handsome species of dwarf habit, seldom growing more than 8 or 9 inches in height; the few oblong-ligulate leaves form a loose distichous tuft, from the axils of which both the roots and peduncles are protruded; the flowers are 2½ inches across, the lanceolate acute sepals and the broader reflexed petals white, and the quadrato-hastate lip rosy-purple in the centre, with a broad bluish-tinted margin, the disk bearing a large obtriangular ivory-white callus with a retuse five-toothed apex, and marked with five distinct bluish-purple bars.—*Bahia.*

FIG.—*Pescatorea*, t. 15; *Paston, Fl. Gard.*, i. pl. 32, f. 22.

SYN.—*Warrea candida*; *Huntleya candida*; *H. radiana*.

W. LINDENII, *Hort.*—A very chaste and beautiful species, allied to *W. marginata*. The flowers are however much larger in all their parts, and the crest is simply bicuspidate, colour pure white, having a few raised purple lines



WARSCIEWICZELLA LINDENII.
(From the *Gardeners' Chronicle*.)

at the base of the lip, which is $2\frac{1}{2}$ inches wide; the flowers measure $3\frac{3}{4}$ inches across.—*Native country not stated.*

FIG.—*Journ. of Hort.*, 1892, xxiv. p. 461, f. 79; *Lindenia*, viii. t. 337; *Gard. Chron.*, 3rd ser., 1893, xiv. p. 493, f. 85.

SYN.—*Zygopetalum Lindenii*.

W. MARGINATA.—See *W. VELATA*.

W. VELATA, *Rehb. f. et Warscew.*—A very beautiful and fragrant species, growing about a foot high, with a few oblong-ligulate acute leaves, a span long, springing with the shorter stoutish peduncle from the crown of the roots; the flowers are solitary, the oblong broadly ovate acute dorsal sepal and petals and narrower lateral sepals all spreading upwards, yellowish-white, and the large broad flat five-lobed lip yellowish-white margined with crimson, the disk radiately striate with numerous purple-crimson bars; at the base is a stout callus resembling a semi-circular row of five or seven teeth.—*New Grenada.*

FIG.—*Bot. Mag.*, t. 5582; *Xenia Orch.*, i. t. 23, f. 1; *Belg. Hort.*, 1878, t. 10, f. 4; *Journ. of Hort.*, 1886, xii. p. 91, f. 16.

SYN.—*W. marginata*; *Zygopetalum velatum*; *Z. marginatum*; *Warrea marginata*; *Huntleya marginata*.

W. WAILESIANA, *Rehb. f.*—A very elegant little species, with dark evergreen leaves, and flowers of moderate size, having the sepals and petals white or cream-coloured, and the roundish concave lip white, stained along the centre with violet; there is at the base a crest of five radiating violet fingerlike bars, which are free except at their origin. The flowers smell like those of the sweet pea. It blooms during the autumn months, lasting long in perfection.—*Brazil.*

FIG.—*Parton. Fl. Gard.*, i. p. 73, f. 48; *Belg. Hort.*, 1878, t. 10, f. 1; *Xenia Orch.*, iii. t. 222.

SYN.—*Warrea Wailesiana*; *Zygopetalum Wailesianum*.

W. WENDLANDII, *Rehb. f.*—A very desirable and handsome species, having a tuft of distichous oblong-ligulate leaves, and stout axillary peduncles, bearing flowers from 4 to 5 inches in diameter, the lanceolate sepals and petals white, somewhat twisted; the lip ovate cordate, multi-lobulate and much undulated at the margins, recurved at the apex, white, with a large oblong blotch of violet-purple, longitudinally marked by about seven darker purple lines, and having a semi-lunate frill or ruff with seven to nine violet-purple ribs. It flowers during August and September.—*Costa Rica.*

FIG.—*Gartenflora*, 1888, t. 1267; *Reichenbachia*, ii. t. 53.

SYN.—*Zygopetalum Wendlandii*.

W. WENDLANDII DISCOLOR, *Rehb. f.*—A very pretty and desirable variety, with light green persistent foliage, and peduncles bearing solitary flowers, which are produced singly from the axils of the leaves, and are deliciously scented; they have the lanceolate sepals and petals yellowish-green, and the ovate cordate lip about $1\frac{1}{2}$ inch broad, much crisped and minutely lobed at the margin, white, having a large bright violet blotch in the centre. It flowers during August and September, and continues about two weeks in perfection.—*Costa Rica.*

FIG.—*Orchid Album*, iii. t. 126.

ZYGO-COLAX, Rolfe.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

A bigeneric genus established for the hybrids raised between *Zygopetalum* and *Colax*, chiefly differing from these two genera in the pollinarium, which is intermediate.

Culture.—Same as *Zygopetalum*, which see.

Z. LEOPARDINUS, Veitch.—A hybrid between *Zygopetalum maxillare* and *Colax jugosus*, raised by Mr. Seden in the nurseries of Messrs. J. Veitch & Sons. "The pseudobulbs ovoid compressed 1 to 2 inches high, diphyllous; leaves 6 to 9 inches long, flowers about 2 inches in diameter; sepals and petals whitish spotted and marked with brown-purple; lip three-lobed, side-lobes rotund, erect, indigo-blue, a fleshy crest between, nearly as in *Z. maxillare*, the ridges blue and the furrows white, the front lobe transversely roundish-oblong indigo-blue, sparingly mottled with white" (*Veitch's Man. Orch. Pl.*).—*Garden hybrid*.

FIG.—*Veitch's Man. Orch. Pl.*, ix. p. 67.

SYN.—*Zygopetalum leopardinum*.

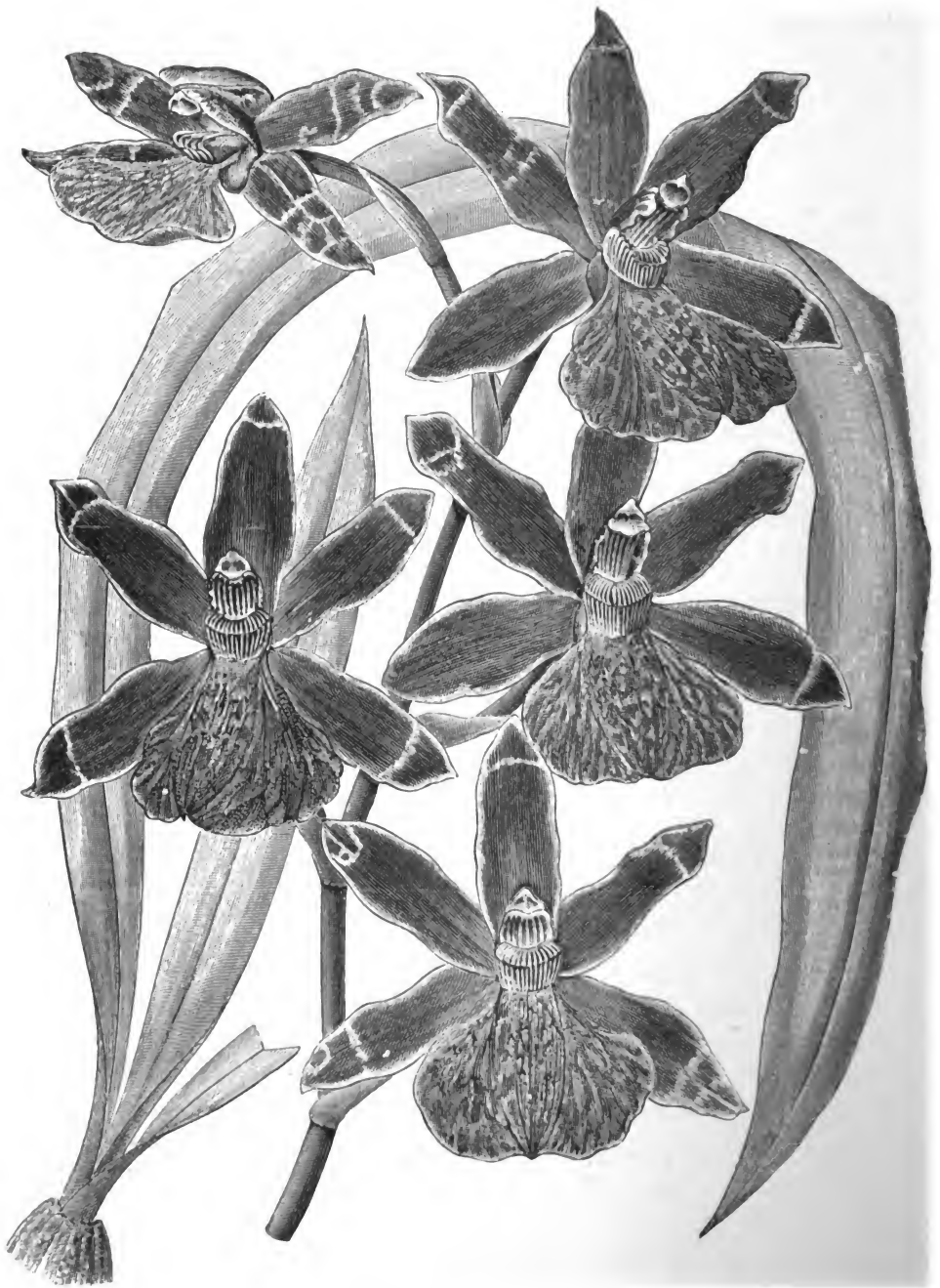
Z. VEITCHII, Rolfe.—A cross between *Colax jugosus* and *Zygopetalum crinitum*. This most interesting hybrid was also raised in the nurseries of Messrs. J. Veitch & Sons. The following is an abstract from the original description by Mr. Rolfe in the *Gardeners' Chronicle*, 1887: "Pseudobulbs ovoid, much compressed, with two or three linear-lanceolate leaves 9 to 12 inches long; scape a little shorter than the leaves, flowers measuring over 2 inches across; the sepals and petals are very light greenish-yellow, marked with numerous small blotches of purple-brown, and the lip yellowish-white with longitudinal striations of violet-purple."—*Garden hybrid*.

FIG.—*Journ. Linn. Soc. Bot.*, xxiv. p. 170; *Veitch's Man. Orch. Pl.*, ix. p. 67.

ZYGOPETALUM, Hooker.

(Tribe Vandeeae, subtribe Cyrtopodieae.)

This genus comprises a considerable number of handsome plants of epiphytal habit, with stout pseudobulbs, distichous venose evergreen leaves, and terminal scapes bearing a raceme of large and showy flowers. The sepals and petals are spreading, united at the base, and the lip is affixed to the foot of the column, and is slightly incumbent, forming a short chin, its middle lobe flat and spreading, and the disk bearing a transverse crest, which, from being ribbed or plaited, has the appearance of a ruff or frill. There are some score or more species known, found chiefly in Tropical and Central America. The name is sometimes written



ZYGOPETALUM CLAYI.

Zygopetalon. The flowers are generally produced during the winter months, a circumstance which makes them specially valuable as decorative plants.

Culture.—Most of the species are rather large-growing plants, of easy culture. The *Cattleya* house is the most suitable place in which to grow them, and they are best kept in pots, with peat and good drainage, and with plenty of water at the roots when growing. They are propagated by dividing the plants.

Z. AFRICANUM.—See *ODONTOGLOSSUM BICTONIENSE*.

Z. AROMATICUM.—See *WARSCWICZELLA AROMATICA*.

Z. BACKHOUSEANUM.—See *PESCATOREA BACKHOUSEANA*.

Z. BELLUM.—See *PESCATOREA BELLA*.

Z. BRACHYPETALUM, *Lindl.*—A handsome species, with ensiform lanceolate leaves, shorter than the tall many-flowered scape; the flowers are showy, with short stiff convex oblong obtuse sepals and petals, which are brown, a little marbled with green, much more brown than green from the blotches running together, the transverse roundish emarginate lip, which is white, veined with deep bluish-violet; the crest or frill of the lip is closely striped with blue. It blooms in December, lasting long in perfection.—*Brazil: Minas*.

FIG.—*Journ. Hort. Soc.*, iv. p. xi., with fig.; *Gartenflora*, 1888, t. 1277.

Z. BURKEI, *Rchb. f.*—A very distinct species, which was exhibited by Messrs. J. Veitch & Sons at the Royal Horticultural Society in November, 1883. The pseudobulbs are clustered, narrow oblong, furrowed, about 3 inches long, bearing a couple of elongate lanceolate acuminate nervose leaves, and a radical scape with four or five curiously marked elegant flowers, of which the ovate lanceolate sepals and petals are green, thickly marked with longitudinal bands of brown, which here and there break up into spots; the unguiculate obovate lip is white, with a ruff of about thirteen crimson plaits or folds. It flowers in November and December.—*Guiana; Demerara*.

FIG.—*Orchid Album*, iii. t. 142.

Z. BURTII.—See *BATEMANNIA BURTII*.

Z. CERINUM.—See *PESCATOREA CERINA*.

Z. CITRINUM.—See *PROMENAZA CITRINA*.

Z. CLAYI, *Rchb. f.*—This distinct and beautiful hybrid, the result of a cross between *Z. crinitum* and *Z. maxillare*, was raised by Colonel Clay, of Birkenhead, and flowered for the first time in 1877. We had the honour of distributing this plant, having purchased the entire stock from him. It is of very free-growing habit, having oblong furrowed pseudobulbs about 3 inches long, and evergreen lanceolate nervose leaves $1\frac{1}{2}$ foot in length; it is also a

very free-flowering plant, producing its large showy blossoms in racemes on radical scapes at different times of the year according to its period of growth; the sepals and petals are deep purplish-brown, with a narrow green margin and transverse bands of the same running through and in some cases forming broad blotches; the lip is broad, $1\frac{1}{2}$ inch wide, deep violet purple with darker purple lines, and paler at the edge, the ruff or callus being whitish with bluish violet plaits.—*Garden hybrid*.

FIG.—*Orchid Album*, ii. t. 50; *Floral Mag.*, 2nd ser., t. 267; *L'Orchidophile*, 1884. p. 214; *Id.*, 1886, p. 327.

Z. COCHLEARE, *Lindl.*—This species produces its flowers singly, having white sepals and petals wax-like in texture; the large lip is deeply bilobed and veined with bluish-purple. The flowers are produced in autumn, and are powerfully fragrant.—*Trinidad*.

FIG.—*Journ. of Hort.*, 1889, xviii. p. 333, f. 52.

Z. CRINITUM, *Loddiges*.—A handsome species, with ovate pseudobulbs, and lorate-lanceolate plicate leaves, shorter than the scapes, which spring from the base of the bulb and support a raceme of several large beautifully variegated flowers, which are produced in winter, and last a long time in perfection. Sometimes two spikes come from the same pseudobulb. The oblong-lanceolate sepals and petals are green, barred with brown, and the broad obovate emarginate lip is white or cream-coloured, streaked with coloured veins which are densely hairy; the callus is small and incurved, yellow.—*Brazil*.

FIG.—*Bot. Mag.*, t. 3402; *Lodd. Bot. Cub.*, t. 1687; *Hook. First Cent. Orch. Pl.*, t. 71; *Revue Hort. Belge*, 1889, p. 145, t. 13; *The Garden*, 1892, xlii. p. 140, t. 870; *Veitch's Man. Orch. Pl.*, ix. p. 67.

SYN.—*Z. Mackayi crinitum*.

L. CRINITUM COERULEUM, *Hort.*—A very beautiful variety, having flowers 3 inches or more across; sepals and petals oblong acute yellowish-green heavily blotched and streaked with ferruginous brown; lip large, undulated at the margin, pubescent, white beautifully marked with forked and radiating downy lines of bluish-purple.—*Brazil*.

FIG.—*Orchid Album*, ix. t. 410.

Z. DAYANUM.—See *PESCATOREA DAYANA*.

Z. GAIRIANUM.—See *PESCATOREA GAIRIANA*.

Z. GAUTIERI, *Lemaire*.—An elegant and most desirable plant. The pseudobulbs are oblong, deeply furrowed, and bear dark green elongate-oblong plaited leaves; the flowers are large, several in a drooping raceme on scapes springing up with and in the midst of the young leaf tufts; the sepals and petals are oblong acute, green, heavily blotched and transversely barred with brown, and the lip is deep purplish-blue, lighter at the edge, the ruff or frill around the column large and of a deep velvety-purple. There are several varieties of this plant in which the colour of the lip ranges from a pale mauve to a deep bluish-purple. This species grows well either in a basket or on a raft.—*Brazil*.

FIG.—*L'Ill. Hort.*, t. 535 (pale lip); *Orchid Album*, i. t. 23; *Lindenia*, vi. t. 284.

Z. GRAMINIFOLIUM, Rolfe.—A very elegant and pretty species allied to *Z. maxillare*. The plant was imported on the stem of a small-growing tree fern *Lomaria Boryana*. The bulbs are much smaller than those of *Z. maxillare*, and the foliage is much narrower; scapes erect, five- to seven-flowered; sepals and petals green, heavily blotched with dark brown; lip bright purplish-mauve.—*Brazil*.

FIG.—*Lindenia*, viii. t. 339.

Z. GRANDIFLORUM.—See *BATEMANIA GRANDIFLORA*.

Z. INTERMEDIUM, Loddiges.—A free-growing, useful old plant, easily grown, and a profuse bloomer; its flowers begin to open during autumn, and continue in full perfection for five or six weeks. The leaves are ensiform, shorter than the raceme of flowers, of which the oblong acute sepals and petals are green tinged with brown; and the large flat roundish bilobed undulated lip is blue streaked with deep purple, and clothed with a downy pubescence. Reichenbach makes it a variety of *Z. Mackayi*.—*Brazil*.

FIG.—*Lindenia*, v. t. 216; *Reichenbachia*, i. t. 16.

SYN.—*Z. velutinum*.

Z. JORISIANUM, Rolfe.—A very distinct species, discovered by Mr. M. E. Bungeroth when travelling for the Horticulture Internationale. It belongs to the section *Euzygopetalum*; the growth reminds one of *Z. crinitum*; the sepals and petals are green blotched with brown, the front lobe of the lip is pure white, the side lobes yellow; crest large, purplish brown.—*Venezuela*.

FIG.—*Lindenia*, v. t. 237.

Z. KLABOCHORUM.—See *PESCATOREA KLABOCHORUM*.

Z. LAWRENCEANUM.—See *BOLLEA LAWRENCEANA*.

Z. LEHMANNI.—See *PESCATOREA LEHMANNI*.

Z. LEOPARDINUM.—See *ZYGO-COLAX LEOPARDINUS*.

Z. LINDENIAE, Rolfe.—A very beautiful and distinct species, somewhat resembling in habit of growth and shape of flower *Z. rostratum*; the sepals and petals are pale brownish-rose; lip large ovate acuminate, white, closely marked with crimson lines over its entire surface; callus deep rose colour.—*Venezuela*.

FIG.—*Lindenia*, vi. t. 275; *Gard. Chron.*, 3rd ser., 1892, xi. p. 172, f. 27.

Z. LINDENII.—See *WARSCIEWICZELLA LINDENII*.



ZYGOPETALUM GAUTIERI.

Z. MACKAYI, *Hooker*.—A very handsome plant, producing long spikes of large flowers during the winter months, and lasting in perfection a long time. The pseudobulbs are large ovate and scarred, with numerous distichous linear-lanceolate leaves, and a radical scape, $1\frac{1}{2}$ foot long, bearing a raceme of five or six large and very effective flowers, which have yellowish-green lanceolate



ZYGOPETALUM MACKAYI.

sepals and petals blotched with purplish-brown, and a large horizontally spreading roundish undulated emarginate lip, white, marked all over with lines and spots of purplish-blue, the disk bearing a large convex ruff or frill, which is also white striped with blue. There are several varieties of this plant, some much finer than others.—*Brazil*.

FIG.—*Bot. Mag.*, t. 2748; *Lodd. Bot. Cab.*, t. 1664; *Parton, Mag. Bot.*, iii. p. 97, with tab.; *Veitch's Man. Orch. Pl.*, ix. p. 57; *Orchid Album*, ix. t. 427.

Z. MACKAYI CRINITUM.—See *Z. CRINITUM*.

Z. MACKAYI INTERMEDIUM, *Hort.*—A very fine and distinct plant, having the leaves longer than in *Z. Mackayi*. The flowers are of a paler colour than in the type, with a fine large expanded lip, and are produced during the winter season.—*Brazil*.

Z. MARGINATUM.—See *WARSCIEWICZELLA VELATA*.

Z. MAXILLARE, *Loddiges*.—A free-flowering and handsome species, producing its drooping spikes at different times in the year, and keeping in beauty for a long time. We have had this species with seventy flowers on a plant at one time. It has oblong furrowed pseudobulbs, lance-shaped nervose leaves attenuated to the base, and large showy flowers on radical scapes; the ovate oblong acute sepals and petals are green, transversely blotched and barred with chocolate-brown, and the lip, which has a blunt spur and a large roundish front lobe, is of a rich bluish-purple; the large frill or ruff on the disk is of a deeper purple, crenate, shaped like a horse's hoof (unguliform) and united to the small erect lateral lobes of the lip. This will do well on a raft or in a basket.—*Brazil*.

FIG.—*Lodd. Bot. Cab.*, t. 1776; *Bot. Mag.*, t. 3686; *Parton, Mag. Bot.*, iv. p. 271, with tab.; *Gartenflora*, 1879, p. 345, with fig.; *Hook. First Cent. Orch. Pl.*, t. 72; *Veitch's Man. Orch. Pl.*, ix. p. 59.

Z. MICROPTERUM.—See *PROMENAEA MICROPTERA*.

Z. ROLLISSONI.—See *PROMENAEA ROLLISSONI*.

Z. ROSTRATUM, *Hooker*.—A showy and rare free-flowering species, which blossoms three times a year, and lasts six weeks in perfection. This makes a fine exhibition plant when well grown. We have shown it with twenty or more flowers, and grown like this it is a beautiful object. It requires more heat and moisture than any of the other species. The plant has a creeping rhizome, forming at intervals an oblong-ovate sub-compressed pseudobulb; the leaves and scapes appear on the young growths, the former lanceolate acute plaited, the latter one- to two-flowered, radical; the flowers are large, 6 inches in depth, the dorsal sepal and two petals linear-lanceolate, 3 inches long, whitish at the base, then green with the centre marked with dull brownish-purple; the lip is ovate recurved, nearly 3 inches long, white, yellowish behind the disk, which bears a small unguulate frill or ruff of pale lilac-purple, about ten lines of the same colour radiating from it towards the front.—*Demerara*.

FIG.—*Bot. Mag.*, t. 2819; *Hook. First Cent. Orch. Pl.*, t. 70; *Lindenia*, ii. t. 68; *Journ. of Hort.*, 1894, xxviii. p. 7, f. 1; *Orchid Album*, ii. t. 78.

SYN.—*Zygosepalon rostratum*.

Z. RUSSELLIANUM—See *PESCATOREA RUSSELLIANA*.

Z. SANDERIANUM, *Regel*.—This plant was at first distributed by Messrs. Sander & Co. as *Z. Gautierii*, which, indeed, it much resembles in habit. The sepals and petals are yellowish-green spotted at the base with purplish-brown; lip roundly obovate, blue with a purplish base.—*Native country not stated*.

FIG.—*Gartenflora*, 1890, t. 1287.

Z. SEDENII, *Rehb. f.*—A distinct and showy hybrid, between *Z. maxillare* and *Z. Mackayi*, partaking in its growth most of the character of the last named or male parent. It has narrow lanceolate plaited leaves, and bold racemes of large showy flowers, of which the sepals and petals are deep purplish-brown, with a very narrow even border of pale green, and not barred or blotched as in the parents; the lip is broad roundish emarginate, rich bluish-purple, deeper towards the base, and breaking out into forked veins near the margin; the frill or ruff is bold and of a bluish-purple.—*Garden hybrid.*

FIG.—*Flor. Mag.*, 2nd ser., t. 417; *Gartenflora*, 1883, p. 280, with fig.; *Veitch's Man. Orch. Pl.*, ix. p. 66; *Journ. of Hort.*, 1893, xxvi. p. 377, f. 69.

Z. STAPELIOIDES.—See *PROMENAEA STAPELIOIDES*.

Z. VELATUM.—See *WARSCIEWICZELLA VELATA*.

Z. VELUTINUM —See *Z. INTERMEDIUM*.

Z. WAILESANUM.—See *WARSCIEWICZELLA WAILESIANA*.

Z. WALLISII.—See *PESCATOREA WALLISII*.

Z. WENDLANDII.—See *WARSCIEWICZELLA WENLANDII*.

Z. XANTHINUM.—See *PROMENAEA CITRINA*.



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CORRIGENDA.

Page.	Line.	
93	32	For "A. Wilsonanum" read "A. Wilsonianum."
94	20	For "five-lobbed" read "five-lobed."
103	29	For "Peristeria Humboldtii" read "Acineta Humboldtii."
113	39	For "Vanda Cathcartii" read "Esmeralda Cathcartii."
118	—	After "Barkeria Skinneri" add "Syn. Epidendrum Skinneri."
120	1	"Batemannia bella" should be "Bifrenaria bella."
126	—	After "Bollea Lawrenceana" add "Syn. Zygopetalum Lawrenceanum."
154	—	"Cattleya blesensis" should be "Laelio-Cattleya blesensis."
156	—	"Cattleya Cassandra" should be "Laelio-Cattleya Cassandra."
158	—	"Cattleya crispa" should be "Laelia crispa."
173	—	"Cattleya marginata" should be "Laelia pumila."
176	17	For "C. Mossiae Alexandra" read "C. Mossiae Alexandrae."
181	19	For "C. Mossiae Victoria" read "C. Mossiae Victoriae."
183	—	"Cattleya pumila" should be "Laelia pumila."
194	—	"Cattleya Zenobia" should be "Laelio-Cattleya Zenobia."
199	—	After "Cochlioda Noezliana" add "Syn. Odontoglossum Noezlianum."
266	1	For "C. Hookero-Veitchii" read "C. Hookero-superbiens."
368	5	For "D. Wardiano-aurea" read "D. Wardiano-aureum."
385	5	For "Renanthera moschifera" read "Arachnanthe moschifera."
387	29	For "E. myrianthinum album" read "E. myrianthum album."
444	—	After "L. purpurata Brysiana" add "Syn. Cattleya Brysiana."
452	—	After "L. Amesiana" add "Syn. Cattleya Amesiana; Laelia Amesiana."
470	32	Delete whole line.
513	—	Bottom line, for "Belge" read "Belg."
520	13	For "M. Joyceanum" read "M. Joyceana."
677	—	After "Pilumna fragrans" add "Syn. Trichopilia candida."
690	—	After "Promenaea citrina" add "Syn. Zygopetalum xanthinum."
691	—	After "Promenaea stapelioides" add "Syn. Zygopetalum stapelioides."

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